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PRESIDENT'S ADDRESS*

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The 30 years I have been attending Medical Associations it has been almost unanimously the custom of the incoming President to inaugurate in his address a somewhat detailed history of medicine, but if that is what you expect from me, I am going to disappoint you, for I am going to talk about some of the things that are and that I hope will be.

Please be informed that my remarks are not necessarily the ideas or the wishes of Organized Medicine in Oklahoma, for I am sure that many will disagree with me, because they are essentially my own ideas, which I think is improper, because I believe that we should at this meeting appoint a Censure Committee to see that each incoming president says the right thing or things that seem right to the profession in general, as passed upon by this representative group of co-workers.

1. I believe that we should through some central head promote in so far as possible a harmony of purpose of all the members of the Association. Doctors being natural leaders have many individual ideas and will not be easily lead, but by an all time active well balanced man the general views of the entire profession, if approached correctly, can be carried out.

2. It is my very sincere desire that we clean our own house, not by wide spread punishment, of any person or group of people, but many of us know people in the profession that are a discredit to our profession. Why should these not be eliminated?

3. Promote Post-Graduate extension work enthusiastically, and in the future, perhaps at the next legislature make it the duty of the Examining Board to qualify each man's license in so far as the applicant will be required to take so much Clinical or Post-Graduate work every so many years, to be designated by a wise and well selected committee, composed of members of Organized Medicine.

4. That our members be encouraged to use, and our druggist be directed to buy only council accepted pharmaceuticals and appliances, and each doctor or druggist have on his desk a list of these things. If this were done there would not be a repetition of the calamitous misfortune some months back, when more than 100 lives were lost, also the Florida incident of late March of this year, wherein ten lives were lost, which should and did discredit every doctor and pharmaceutical house in America. Why should we set up a Council on Pharmacy and Chemistry and maintain it at an enormous cost and at the same time buy from some fly-by-night company that can sell cheaper products, because they do not go to the expense of maintaining an expensive research laboratory.

5. Some manner of compensating the average doctor for services rendered the indigent, namely, city, county, state or federal government, for I believe they are the charges of all the people, as they have so increased in numbers that it is no longer possible for the individual physician to

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give adequate care to all of them, as it has been in the past.

6. Unlimited birth control information to be disseminated by the doctor individually at his discretion and not through a Birth Control Clinic, which usually drifts into the hands of an incompetent Social Service worker.

The health and lives of 700,000 women is jeopardized each year, and 41% of the puerperal deaths each year are caused by criminal abortions.

7. Compulsory pre-employment physical examination for all employees of labor, with subsequent periodical physical examinations.

8. Sponsor a law whereby all Life Insurance companies must have all applicants medically examined and discourage all people from buying non-medical policies.

9. Require physical examinations, including test for gonorrhea, syphilis and tuberculosis for all dispensers of food and food handlers, semi-annually or annually as now incorporated in the Barber Practice Act.

10. A health certificate for both man and woman before entering marriage, and this certificate to be issued by some disinterested medical authority, not the family physician.

11. The sponsoring of a law to be enacted, whereby all owners of cars or trucks driven within the state must carry enough insurance to pay all just doctor bills or hospitalization for any person or persons injured by such car.

12. Some form of Hospital Pre-Payment insurance, to be worked out between the Medical Profession and the hospital authorities, which must not include anesthetics, X-rays, laboratory work or any other medical or surgical service, but hospitalization alone.

13. I request that each County Medical Society co-operate to the fullest extent with the state and county health boards in their most excellent and worth while undertakings, but that any all time or part time health unit be discouraged or barred from practicing medicine, in so far as treatment of disease is concerned, but confine their activities to educational information regarding sanitation and hygiene, prenatal and postpartum visits by the public health nurse. Administration of the tuberculin test and the Schick test, but at all time direct the reactors in these cases to report to their family physician for treatment. I am especially opposed to the setting up of free venereal clinics, but that these diseases too be taken care of by the various doctors individually as has been done in the past.

14. I recommend the enactment of a law authorizing a State Health Board, composed of nine members, one retiring each year. The majority of whom must at all times be physicians and that this health board employ and supervise the activities of the state health officer. They to serve without pay, except their per-diem expenses.

15. *Politics.* I am pleased to encourage all men in Organized Medicine to become politically minded, if they have not already done so, for we are in politics from now on whether we like it or not.

I especially would like to encourage doctors and their sons, when convenient to present themselves as candidates for the house and senate, for from personal experience, I can assure you that it is a lot of comfort to the legislative committee to have a doctor or a doctor's son in either of these law making bodies.

I think it is our duty to demand of the legislature a place in the Legislative Sun and see that they give us laws to protect the general public and our own profession as well.

One of which I recommend, known as the Registration Law, passed in the last senate and killed in the house, by a shrewd and designing politician, with no reason at all, except selfish political purposes, as it affected no one except our profession.

Also I would recommend some few changes in the Basic Science Law, passed in the last legislature, I think it is a good law, but can be improved by minor changes. Also some two or three sections of the Medical Practice Act should have changes, which will work for the benefit of all the people, including the Medical Profession. Especially should it be amend-

ed to bar the advertising quack and unscrupulous qualified members of our profession.

16. That we pass a resolution asking congress through both of our senators and various representatives, that the president's cabinet be given a doctor member to supervise and control by co-ordination all of the 12 or more departments of our government that are handling medical matters.

These things, ladies and gentlemen, with others that will present themselves from time to time during my tenure of office will be given attention as whole heartedly as my mental and physical capacity will permit.

SHOCK*

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I. *Definition* — Samuel Gross defined shock as "a rude unhinging of the machinery of life." Dorland defines shock as "a sudden vital depression due to an injury or emotion which makes an untoward impression on the nervous system." Wright describes shock as "a condition in which the sensory and motor parts of the reflex arc are paralyzed to a greater or less degree together with a profound disturbance of the capillary circulation." Cutler states that "shock is a symptom complex resulting from a rapid dimunition of the circulating blood volume below the point of circulatory efficiency." Shock is a syndrome, a group of symptoms and not a disease. It is seen in a wide variety of clinical conditions including extensive surgery or trauma, extensive burns, poisoning with various substances, metabolic intoxications, abdominal emergencies, and severe acute infections. It may occur in association with cardiac disease.

II. *Mechanism* — The mechanism of shock is not very well understood and is still debated in the literature. On account of the length of time alloted me, I can only be dogmatic and state what to me seems to be the most logical explanation of shock. There is first a vaso-motor constriction which maintains the arterial pressure for a time, then there follows a decrease in the return of blood to the heart causing an accompanying decrease in the cardiac output; as a result of this the blood pressure then declines, and vaso dilatation occurs. When there is dilatation of the capillary bed there follows a course of events which consists of increased permeability of the capillaries. There is insufficient supply of oxygen to the tissues, decrease of heat production and increase in viscosity of the blood. The escape of blood plasma into the tissues spaces is associated with stagnation of the blood within the capillaries, diminution of the alkali reserve and accumulation of toxic products. It is well agreed that in shock there is a decrease of blood volume, stagnation within the capillaries and increased permeability of the capillary wall. Hence, shock is due solely to loss of fluids into the tissues outside of the vascular system. The explanation of what causes the above syndromes is still a question. Of the various theories advanced as to the cause of shock, there are none that have been universally accepted and many of the theories that were popular a few years ago have been disproven or at least questioned by other authorities.

III. *Causes*—There are many causes of shock, among them being:

1. Trauma with marked damage to tissues.

2. Prolonged anesthesia.

3. Prolonged operative procedures with rough handling of tissue.

4. Shock that occurs from ruptured abdominal viscera.

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5. So-called pleural shock. Shock may be produced by a sudden blow on the abdomen.

6. Obstetrical shock.

7. Shock from freezing or burns.

8. Mental or physic shock, which is generally associated with one of the previous mentioned types.

9. Shock that occurs in cardiac disease, poisonings, and infectious diseases.

Shock is divided into primary shock which occurs immediately following an injury and is probably neurogenic. Secondary shock occurs later and post-operative shock is of this type. Primary shock may merge into secondary shock, or so-called secondary shock may occur without evidence of primary shock.

IV. *Symptoms*—Patients in shock may present several or all of the following characteristics:

1. Low venous pressure.

2. Low arterial pressure.

3. Rapid thready pulse.

4. Diminished blood volume.

5. Increased concentration of RBC and Hgb.

6. Leukocytosis.

7. Increased blood nitrogen.

8. Reduced blood alkali.

9. Lowered metabolism.

10. Subnormal temperature.

11. Cold moist skin.

12. Pallid, grayish or cyanotic appearance.

13. Thirst.

14. Shallow rapid respiration.

15. Vomiting.

16. Restlessness.

17. Anxiety progressing to mental dullness.

18. Patient reacts slightly to stimuli.

19. Limbs are toneless, sense of deadness in the limbs, listless, flacidity of muscular system.

20. Decreased or loss of reflexes.

V. *Diagnosis* — The patient following a severe injury may be seen by the physician or surgeon and his general condition appear quite good and the surgeon may be mislead as to the impending shock that will later develop. All physicians have seen patients admitted in apparently good condition and that are not "yet shocked" and then go into profound shock. It is very important for the surgeon to recognize shock in its earliest stages to prevent severe shock developing.

The difference between shock and hemorrhage in a case that has lost a great deal of blood, if seen prior to the onset of shock, may present certain symptoms that are helpful in differentiation. In a case of hemorrhage the capillary bed remains normal and if fluid is introduced into the circulatory system will remain there much better than in a patient with shock where the capillary bed presents marked permeability allowing escape of fluids into the tissues. However, most patients that have had severe hemorrhage will show symptoms of shock. Cannon states that "shock is hemorrhage and hemorrhage is shock." It is agreed by all that hemorrhage in shock is always serious.

At this point I wish to state that there is no difference between medical and surgical shock and shock that occurs in cardiac disease, pneumonia, typhoid fever, and other diseases has the same basis as post-operative shock and the mechanism is the same. In shock there is a concentration of blood in the capillaries and the blood count will show an increase in the RBC and Hgb. This is helpful in diagnosing shock from hemorrhage, as in hemorrhage without shock the reverse is true.

VI. *Treatment* — Assuming that the causes or condition present in shock is due to a decreased blood volume the rational treatment is to restore this lost blood volume. However, this is not as simple as it appears on account of the fact that leaking capillaries allow the escape of fluid through the walls. Shock is not a single entity and no single remedy is sure to give results. However, there are certain procedures that can be used that do much in preventing shock deepening and allowing the patient to recover. It is trite to state that the best treatment of shock is to prevent it. This is one of the most important factors in

the treatment of shock. As my subject is post-operative shock, I will confine my remarks to that field.

Hasty elective surgery in a patient whose vitality is lowered by disease or age is to be condemned and every effort should be made to get these patients in as good condition as possible. In the surgical emergencies and those who have been injured all effort should be made to prevent shock occuring or if shock is present the shock should be treated and surgery delayed if possible until the patient is in better condition. Operations should be performed with the greatest of speed and gentleness and care taken to obtain hemostasis. The choice of an anesthetic in a poor risk patient is important as a factor in the prevention of shock. Some surgeons believe spinal anesthesia increases the shock, others oppose this view. Crile advocated "Noci—association" by infiltration of a local anesthetic about the wound combined with nitrous oxide inhalation anesthesia. Ethylene and cyclo-propane probably are as unlikely to enhance shock as any of the anesthetics. Ether especially over a considerable time has a bad effect in a patient susceptible to shock.

Restoration of blood volume is best obtained through blood transfusions, particularly if shock is associated with hemorrhage. Intravenous gum acacia stands next to blood transfusion and should be used in all cases of beginning or advanced shock while waiting for a donor. Next in order is the intravenous administration of glucose. It is probably true that normal saline is of little value in treatment of shock, as its effects are too transient. However, if there is an associated dehydration and fluid is needed, saline subcutaneously in certain cases may be helpful. The application of heat is very important and every effort should be made to keep the patient warm. Morphine should be given particularly in the early stage of shock. Wallace states that "warmth and rest are the most important factors in the treatment of shock." Cutler and Scott state that "other than transfusions, heat and morphine will do more to restore vasomotor tone than all other procedures advocated." The use of other drugs in shock is generally of very little use, except in special instances, as the use of ephedrine in the shock of spinal anesthesia. The use of oxygen and carbon dioxide inhalations has been advocated and is probably of some benefit especially if there is marked anoxemia. Reassurance of the patient is of the utmost importance in the treatment of shock, as fear and other emotions are important in the production of and the deepening of shock.

There is no satisfactory treatment of shock that has persisted for several hours and it is important to reduce the incidence of shock and give adequate treatment of the condition during the early stage of its development. In spite of the fact that shock is very common, our information concerning it is still very incomplete.

CONSTIPATION*

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Constipation has plagued both the medical profession and the layman since the early history of man when he banded together to live in communities. Hippocrates, Celsius and others in their writings discussed the condition and suggested sound and reasonable treatment. Even in that day a great deal of stress was laid by them on the abuse and harm of cathartics.

As we all know constipation is still today a prominent complaint of many individuals who consult us.

It is my belief that intelligent treatment properly carried out can and will relieve these individuals and as physicians I feel it is our duty to educate them to this fact

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by proof. Too often the doctor inadvertently suggests to the patient to "take a physic" which leads him to believe that this is quite the thing to do when such I'm sure is not the case. It is also a duty of ours to counteract the misinformation the layman has gained through the commercial exploitation of pseudo-scientific and fraudulent remedies. Today one can not read the advertisements in a magazine or newspaper or listen for any length of time to a radio without seeing or hearing of the dangers of constipation and how this or that particular remedy will harmlessly cure the condition.

General Considerations

What is constipation? Almost every person has a different conception. If the stool is large and firm it is called constipation; if there is a feeling as though the rectum did not completely empty it is called constipation; if the passage is thought to be too small in amount it is constipation; or if the bowels do not move regularly it is constipation. Yet with all of the varying ideas there is a common denominator which includes the elements of consistency, volume, and rate of passage. It must be remembered, however, that the colonic function of individuals varies and yet may be within normal limits. The great majority of individuals have one evacuation daily. A certain percentage have habitually two or three evacuations per day, while occasionally an individual is seen who habitually has an evacuation every second or third day. In all other respects these individuals are perfectly normal and so we must conclude that this variability is physiological.

Anatomical Considerations

Embryologically the colon is derived from the hind gut. In its formation it goes through a lengthening process, then loops upon itself and undergoes rotation. At this time the cecum normally descends into the right iliac fossa. Any of these transformations may be incomplete or fail to occur or the opposite may take place so that the colon lengthens to such a degree as to favor constipation. In 85 to 90 per cent of individuals the cecum is in the right iliac fossa. The transverse colon varies a good deal in position and is frequently below the interiliac line. The hepatic and splenic flexures vary markedly in position and in their relation to each other. It is not infrequent to see pelvic positions of the colon without any associated constipation. Conversely, many colons lying in what we consider a normal position are subject to constipation. It is the habitus of the individual that determines the position of the colon. As Spencer has stated the functional efficiency of the colon is more important than the anatomical.

Physiological Considerations

The food and liquids arrive at the cecum in a soft mixed fluid state in about two to four hours. The ileum is practically emptied in seven hours. It was formerly thought that a gastro-colic reflex caused a discharge of the ileal contents into the cecum. Recently Welch has shown that there is no true gastro-colic reflex as putting food directly into the stomach through a gastric fistula does not result in emptying of the ileum, but feeding by mouth does initiate the reflex. Thus there is an appetite or taste reflex, but not a gastro-colic one. The residue in the cecum and ascending colon remains there the greater part of the time prior to defecation. Alvarez has shown that 15 per cent goes through quickly, 50 per cent passes on the second day, and that approximately four days are required to pass 75 per cent of the mass. The type of food, however, and the number of stimuli arising in adjacent organs have a definite bearing on the muscular activity of the normal colon. In addition and more important as a regulatory mechanism are certain motor phenomena consisting of pendulum movements that mix the cecal contents, and peristaltic and anti-peristaltic waves that cause the material to be retained in the cecum and ascending colon. The purpose of this is to allow the absorption of fluid and salts, which is the chief function of the colon, other than acting as a reservoir. There are also mass movements which occur in the transverse colon about five to six times daily and force the mass into the descending colon and rectum. Bacterial digestion also occurs in the colon and probably should be considered a physiological process.

When food reaches the rectum a reflex is initiated which results in a desire for defecation. With defecation the fecal mass may empty out as far back as the transverse colon or only the rectal contents may

empty. It has been demonstrated that after the colon has been at rest a slight stimulus results in extremely active peristalsis which accounts for the frequency of a bowel movement after breakfast. With constipation there is a delay in the passage associated frequently with an excessive absorption of water.

Etiology

Before discussing the etiology of constipation it should be understood that organic causes both within and without the gastrointestinal tract are not under consideration.

The greatest single cause today is probably poor habits. First, the normal urge to defecate has been ignored so frequently and over such a long period of time that either the reflex is weakened temporarily or the sensorium has become dulled and unresponsive to the message. Second, faulty dietary habits have become prominent. With the supposed progress in our civilization we have become eaters of highly refined foods that offer insufficient stimulation for peristalsis. Many individuals have the habit of eating little or nothing for breakfast and perhaps only a sandwich for lunch. To this there is added insufficient water intake.

Emotional upsets and the constant tension of today's high-pressure living is often an important factor as they can cause colonic stasis. Some psychoanalysts as mentioned by Menninger feel that constipation at times is due to repressed tendencies and unconscious desires which serve as a constant stimulation and thus cause chronic dysfunction.

The use and abuse of cathartics, laxatives, and purgatives results many times in constipation. The average layman believes that the retention of waste matter in his bowel longer than a day will materially affect his health and so he takes a physic. He further believes that if the bowels fail to move the day after a physic he is constipated, not realizing that time must be given for the bowel to fill sufficiently to effect normal stimulation. Another misconception is that such symptoms as "biliousness," headache, vertigo and fatigue respond to cathartics. It seems easier and less expensive to reach for a pill rather than consult a physician. But this fault does not lie entirely with the layman, as physicians have failed to educate the public and have allowed unethical commercial firms to broadcast misinformation. This constant taking of laxatives causes irritation and inflammation of the mucosa of the colon and by abstracting water and reducing the residue causes spasms and alters the normal secretions resulting in a diminished or absent defecation reflex.

In an interesting article by Kraemer he statistically studied a large group of patients to determine the cause of their purgative addiction and found it to be first, advertisers; second, the medical profession; third, parents; and fourth, friends, which included husband and wife. The advertisers, however, were equal to the other three combined. He also stated that 70 per cent of the populace is addicted.

Diagnosis

The diagnosis of constipation must be established from the patient's history and by a careful painstaking examination. This should include a digital rectal examination and often a sigmoidoscopic examination. Roentgenoscopic observation after giving barium by mouth so as to observe its progress through the colon and a barium enema may be necessary in order to definitely exclude organic causes. The reassurance that this enables the physician to give the patient is often extremely helpful. The presence of vague indigestion, headache, and constipation does not mean that these symptoms may not be secondary to an old peptic ulcer, gall bladder disease, or chronic appendicitis. Occasionally, one sees a patient with a low basal metabolic rate which when elevated to normal corrects the constipation.

Treatment

General Hygiene — The treatment of constipation must be approached from many angles. First of all the patient must be reassured that there is no organic pathology. This is extremely important as the nervous woman and the high tension business man are both fearful lest it be something serious. It should be explained to the patient that the normal number of evacuations per day varies in different individuals and that no harm will come if the bowels fail to act for several days. Unfortunately the bugaboo of auto-intoxication is a difficult phobia to separate from

the patient. He should be told that experimental proof of such a condition is lacking and that even if bacteria or toxins should get through the walls of the bowel, nature has adequate outposts in the lymph nodes and liver to stop the organisms from getting into the general circulation or change the toxins to harmless products. It is a fact that in Hirshprung's disease the commonly attributed symptoms of autointoxication are not present and yet there are tremendous amounts of retained fecal material.

A regular habit time must be established and physiologically this should be after breakfast. However, a "call" should never be ignored. Arising early enough so that time can be given without rush is important. It is probably not a good idea to read at this time.

Rest, relaxation, regular vacations, and if necessary the elimination or reduction of responsibilities are helpful. Sedatives may prove of some benefit but I doubt that I have ever seen any results from the use of antispasmodics such as belladonna.

Exercise is often a worthwhile adjunct for the sedentary worker or housewife as it not only tones up the muscular system, but has relaxing qualities if carried out intelligently. It should not be indulged in to the point of fatigue as this can cause or aggravate the condition. Light massage may at times prove beneficial.

Diet—The diet of the patient must be suited to the individual and it is preferable to give the patient a written or typewritten copy rather than a standard mimeographed one. Frequently one sees diets for atonic constipation and for spastic constipation, yet true atony of the colon without an organic basis is undoubtedly very rare. In the presence of marked redundancies one sometimes does see generalized atony. During roentgenoscopic examinations one may see dilated areas, but they are usually associated with spasticity or the two may sometimes occur in the same individual at different times. Hence, in general, the diet usually tends toward a smooth one with the elimination of excessive roughage such as foods with large amounts of fiber or skin. For some individuals raw fruits and raw vegetables must be omitted and temporarily only the pureed ones used. This does not mean that extra bulk in the form of raw fruits and green vegetables is never indicated.

Occasionally in the thin, undernourished individual a diet high in fats of the type in cream, butter and olive or vegetable oils is helpful as they have a laxative effect. The diet, however, must be balanced. In other words it must contain the "protective" foods which include one pint of milk, four servings of vegetables, two servings of fruit, one serving of meat, one egg and a tablespoon of butter each day. Meals should be eaten slowly enough to be properly masticated and this presupposes an adequate set of teeth. Business, worry and arguments should be avoided at meal times.

Fluid — The amount of fluid intake should be at least eight glasses daily. There is no objection to drinking water with meals as long as it is not used to flush the food in the mouth unchewed into the stomach. Occasionally a glass or two of water in the morning on arising is helpful.

Mechanical Aids—In addition to the general hygienic measures and dietotherapy it is often necessary especially at the onset of treatment to obtain the help of mechanical aids. The most useful of these are probably the mild and non-irritating bulk producers such as plain granular agar and the vegetable mucins. Agar can be taken dry and washed down with water or it may be added to cereals and soups. The average dose is from one to three teaspoonsful with each meal. The vegetable mucins are equally as efficient but have the drawback of expense. One to two teaspoonsful with plenty of water at bedtime and occasionally also on arising is the usual dosage.

With some of these products vitamin B has been incorporated. There is no doubt that vitamin B has some effect, but I have not been convinced of its clinical value in constipation. Because of the extensive advertising by the yeast manufacturers many of us have seen patients who on their own initiative have tried yeast and thought it was beneficial, but discontinued its use because of distress from excessive gas formation.

Bran and various seeds are extensively used, but as they are probably irritating to some colons it seems better to use the

blander bulk producers. It should be kept in mind, however, that any of them may occasionally form masses in the rectum, especially in older individuals and this may occur even though there is some bowel movement daily. Therefore, an occasional rectal examination should be made.

Oils of various types have been used for many centuries. At the present mineral oil seems to be the one of choice. It is unquestionably a definite aid. How it works is not understood although we glibly speak of it as a lubricant, though it has been shown that it does not act in this manner. Olive oil is equally efficacious. Of course, where obesity is present its use would naturally be inadvisable.

Physics and laxatives generally speaking have no place in the treatment of constipation except possibly temporarily or when the other methods have failed, or in the aged edentulous patient. Fluid extract of cascara and milk of magnesia seem to be the least harmful. If an individual has taken cathartics for 40 or 50 years without apparent harm there is no reason to discontinue them. The fact is the attempt will usually be unsuccessful anyhow.

The use of enemas is still a bone of contention among physicians. As with laxatives they have been used since the time of the early Egyptians. They are only temporary aids and should be considered as such. It is often helpful both mentally and rectally to have the patient use a small enema of physiologic salt solution occasionally at the onset of treatment providing the bowels are not moving otherwise Olive oil retention enemas are also helpful at times in the early weeks of treatment. High colonic irrigations can be dismissed quickly. They are unphysiologic, often harmful, and have no place in the treatment of constipation.

Conclusion

Constipation is a condition almost as old as man himself. Its marked prevalence is a reflection on us as physicians. Proper treatment which includes attention to the individual's general hygiene as well as his dietary habits can correct the condition.

ROENTGEN THERAPY*

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The status of roentgen therapy is well established in the realm of malignancies. For example, in malignancy of the skin, excellent results are obtained in over 90 per cent of the cases, regardless of the quality of the rays we use. The only requirement is that the total dose be administered preferably within two weeks. In my experience, 63 kilovolt X-rays unfiltered are just as effective in malignancy of the skin as 200 kilovolt X-rays through a half millimeter of copper. I have delivered the unfiltered rays at 550 roentgens per sitting every other day for five or six times as suggested by Dr. Martin and his father.

I have protracted and fractionated the 63 kilovolt rays with two milliamperes and one millimeter of aluminum down to a minute "r" afflux of 13. At this rate, 150 or 200 roentgens per day for two weeks has cured several lesions. This reaction never progressed beyond an erythema.

I have also followed the rate of administration advised by Dr. H. G. F. Edwards of Shreveport, in the October, 1937, issue of the Southern Medical Journal. Using five milliamperes and 63,000 volts at eight inch distance, my equipment delivers 1,200 roentgens in ten minutes. This may be repeated, as he states, at seven day intervals for three or four times, depending on the induration of the growth. The tissues recuperating 70 per cent each week. This method and Dr. Martin's method produce

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severe skin reactions, but not quite so severe as those of Dr. R. L. Sargent of Oakland, California, who advises 2,500 roentgens in air unfiltered in one sitting "just to brush off the surface" and repeats in three days two or three times, depending on the size of the growth.

I recently administered 4,000 roentgens in air through five-tenths millimeter copper to an excavating carcinoma behind the ear. The reaction required four months to heal. To use the farmer's own words, it acted as though some one were in there ploughing and turning up large furrows for that length of time. All of these methods have produced excellent results, but I wish to state that Dr. Sargent's technique keeps the operator awake too much at night. The reactions finally do heal, however.

I have mentioned all of this to show that the treatment of skin carcinoma is almost standardized, providing the operator's equipment is calibrated in roentgens and he follows the technique of some older and more experienced man. The only skin malignancies which the above techniques failed to cure were those which either I or someone else had undertreated by the old skin unit dosage system. As you all know, the trend now is to treat these failures with two to five millimeters of copper at short target skin distance. I have had no experience with Chaoul's method of contact therapy, but it seems very promising.

In deep therapy, the techniques are not nearly so well standardized for internal cancer. Every one is riding his own hobby. The filters are thickening and the voltages are rising in an effort to duplicate the gamma ray effect of radium. If this trend continues, the filters will be so thick that the tumor will be receiving more and more of less and less. If one permits his imagination full play, some of the more heavily endowed institutions will finally have such powerful machines and such thick filters that the treatment will be entirely psychic because no X-rays will be getting through.

Seriously, gentlemen, there must be a middle ground. Or, as Dr. Erskine suggests, it might be more beneficial in crowded institutions to develop a good quality of X-radiation at a rapid rate, say 200 kilovolts and 100 milliamperes. Then, as he states, multiple ports could be used to deliver a depth dose of sufficient intensity in a short period of time. This, of course, would be following the massive dose technique advocated by Seitz and Wintz rather than the protracted fractionated method of Coutard. Parenthetically, we should remember that the slow method of irradiation was advised primarily for carcinoma of the larynx of the intrinsic type and that the work of Seitz and Wintz on carcinoma of the cervix cannot be conscientiously discarded as yet.

I do not wish to create the impression that a million volts against cancer, with thicker filters, is fantastic. It is, however, very uneconomical. I would like to emphasize the fact that it is not the machine, but the man behind it that cures cancer. I also wish to state that the techniques for treating internal malignancy are in a constant state of unrest and that this wholesome state of "rugged individualism" will finally lead to better techniques than we are using at present.

On the other hand, we must admit that irradiation is probably not the final answer to the problem of malignancy. I would like to reiterate that we are limited in our attack on the tumor by the amount of irradiation the host of the tumor can "take" and still live and function normally, or nearly normally.

Roentgen therapy is also invading the realm of benignancy to an unprecedented extent. Aside from about 80 skin diseases, various acute and chronic infections are now being treated. Here again rugged individualism plus time will develop definite indications and contra-indications and useful and accepted techniques will be developed.

Erisypelas responds well to 75 roentgens unfiltered, or lightly filtered, daily for two or three days, but according to Dr. Rigler of Minnesota massive doses of ultra violet will produce good results with no possibility of producing unreversible skin changes. It can also be handled well with sulfanilamide.

Cantaloup sized fibrotic metropathies respond well to a "deep therapy" castration dose. I think roentgen therapy is the method of choice in women near the end of the child bearing age. A few surgeons in my

community feel the same way and they also think the same about climacteric hemorrhage. The age limit may be disregarded if for some reason surgery is contraindicated. In these younger women X-ray is to be preferred to radium because of its slow effect in producing the menopause (Kaplan).

Hyperthyroidism, preferably bilaterally symmetrical hyperplastic elastic g l a n d s (Grave's disease), have responded well to multiple doses of roentgen therapy over several months time. Personally I feel that in hyperthyroidism a quality produced by two to four millimeters of aluminum at moderate voltage is more sedative and stabilizing than the quality produced by copper filtration and higher voltages. I have never used Lugol's solution or digitalis except in one post-operative recurrence managed by copper filtration. I would like to remind you that Dr. Alden H. Williams in a large series of hyperthyroidism used only three millimeters of aluminum over a 10 by 15 centimeter port over the thyroid and thymus at seven to ten day intervals, depending on the exigencies of the case.

I have one female patient who has remained stabilized for eight years. She was treated through six millimeters of aluminum through multiple three-quarter inch ports over each lobe and isthmus. In roentgens each port was receiving about 250 in air every ten days. This case was examined by Dr. Hertzler two years or so ago. He reported a fibrotic condition of the thyroid with no evidence of hyperthyroidism. He stated that in his experience she would finally come to surgery. At the present time she is still stabilized and has had no surgery. I feel that I am too young in the game to dispute him.

I have treated two cases of phlegmonous inflammation of large size extending from the mastoid process to the acromion with resolution in seven to ten days. Both had been incised without striking pus. The dose on each case was 250 r o e n t g e n s through six millimeters of aluminum at moderate voltage. They might have resolved anyway? Who can say.

I have t r e a t e d only one case of gas gangrene. He had sacrificed his arm and received anti-tetanic and gas g a n g r e n e serum as well as intra-muscular injections of oxygen. His temperature curve had already started down, but from Kelly's technique he seemed to receive an extra kick which did him a world of good. He is living.

My eye, ear, nose and throat colleagues support me royally. Diphtheria carriers, whether tonsillar or post-nasal, have responded well to nasal syphons and 75 to 200 roentgens at moderate or high voltage.

Chronic adenitis, cervical or otherwise, responds well to 150 roentgens through aluminum or copper. I feel that we need no controls on these cases because of several weeks duration and immediate response to roentgen therapy within a week or ten days. Tubercular adenitis requires several doses and a longer time for resolution. I have treated one case of tuberculous fistula following a biopsy on a supraclavicular gland with excellent results.

I feel that acute adenitis s h o u l d be studied more closely by control series in large institutions. They seem to respond well to 75 roentgens d a i l y at moderate voltage through either aluminum or copper. They either suppurate immediately and require surgical incision or they resolve shortly without suppuration.

I have one eye, ear, nose and throat man who refers his otitis media cases for 75 to 100 roentgens at moderate voltage, through four millimeters of aluminum. He claims that it helps and they dry up more rapidly.

A case of lymphangiitis of the tongue and floor of the mouth was recently treated through four millimeters of aluminum in addition to prontylin, with recovery in 36 hours.

Before I close, I would like to report the treatment of a case of a neoplasm of the cornea in a woman of 84 obscuring vision and the iris and protruding one centimeter anterior to the cornea and of such bulk as to separate the palpebral f i s s u r e quite widely. The ophthalmologist thought it too massive to dissect. She was treated daily with 130 roentgens generated at two milliamperes and 63,000 volts through one millimeter of aluminum at a minute "r" afflux of 13; in other words, ten minutes daily for 14 days. The lesion melted away in three months. The patient could see. In another month a small "striffin," to use the patient's term, still remained across the pupil. At present, the "striffin" has re-

grown until it is about one-fourth the size of the original lesion. The ophthalmologist still does not feel justified in dissecting it off the cornea. She recently received 700 roentgens through one-quarter millimeter of aluminum, in addition to two desiccations with the short wave unit and she can see again. All of these treatments required two per cent butyn and a lid retractor. I know now that pontocaine causes less congestion of sclera. The lashes are still in situ, the cornea is not inflamed and, barring ill-luck, I believe this elderly lady will be able to see throughout the remainder of her normal expectancy.

I wish to take this opportunity to thank my various colleagues for their faith in the new science of modern radiology.

Epidemic Encephalitis, St. Louis Type

Survey of the Outbreak, Summer and Fall of 1937

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This report is based upon 134 cases of epidemic encephalitis, St. Louis Type, treated in the St. Louis City Isolation Hospital, St. Louis, Mo., occurring in the late summer and early fall of 1937.

During this period, a total of 987 cases of epidemic encephalitis were reported to the Health Department of the City of St. Louis and St. Louis County; in the former 431 cases; in the latter 556 cases. A total of 1,097 cases were reported to the same Health Departments during the 1933 epidemic; 557 from the city and 520 from the county[1].

All cases admitted to the hospital with the diagnosis of epidemic encephalitis that proved to be other conditions have been eliminated. Among the conditions sent to the hospital with this diagnosis were acute poliomyelitis, epidemic meningitis, streptococcus meningitis, tuberculous meningitis, luetic meningitis, brain abscess and acute arthritis.

The problem of differential diagnosis for the referring physicians, as well as for us in the hospital, was made doubly difficult by the presence of acute anterior poliomyelitis in near epidemic proportions within the metropolitan area, and a sizable epidemic just across the river in Illinois.

The summer of 1937 was relatively cool until August. From August on until early winter it was very dry. There was some hot weather in July, August and September.

The epidemic of St. Louis Type encephalitis of 1933 was preceded by an extremely dry and hot summer. The rainfall in the metropolitan area was the lowest in the history of the weather bureau[2].

Encephalitis is not a new disease. According to medical historians (Jonothan Wright) clinical descriptions of illnesses that correspond closely with the picture of lethargic encephalitis as it is known today occurred as early as the time of Galen. At subsequent periods infrequent references are found to illnesses occurring in epidemic proportions, whose clinical descriptions are much the same as lethargic encephalitis.

In 1890, during an epidemic of influenza that occurred in northern Italy and southern Hungary lasting from 1889-91, Von Economo described a mysterious illness under the title of "Nona." Longuett reviewed this illness and published a complete review of "Nona" in 1892[3]. Their descriptions cover the picture of lethargic encephalitis.

In the winter of 1916-17, an illness characterized by lethargy, stupor, cranial nerve palsies, etc., broke out in Vienna. It was painstakingly described by Von Economo

and christened by him "Encephalitis Lethargica."[4] It was reported by Netter in Paris in 1917[5]. Later, it spread to England, America, and to all known parts of the world. It occurred in epidemic proportions in this country in 1919-25, inclusive. At the present time it is endemic throughout the world. It is the winter type of encephalitis. It is called either lethargic encephalitis or encephalitis, Type A.

Epidemics of summer type of encephalitis have occurred in Japan since 1871. Altogether the Japanese have reported 13 separate epidemics. The last was reported in 1929[6].

The first epidemic in 1871 affected mainly older people. The second, in 1873, was small, but the mortality was reported as 90 per cent. The third occurred from July to October, 1901, a large one affecting mainly older people. The 1903 report was predominantly a meningeal type occurring from August to November. The fifth in 1907, and the sixth occurred mainly in Tokyo. The seventh was another epidemic occurring from August to October, 1912. In 1916, another large epidemic occurred with a fatality rate of 61.5 per cent. In 1917, another epidemic attacked younger individuals from 15 to 20 years of age, but with a fatality rate of 10 per cent.

During the outbreak of 1919, the Japanese concluded they were not dealing with an epidemic meningitis, as they had thought until this time, but that this was a meningo-encephalitis of a special kind.

In 1924, they had their largest outbreak, 7,000 cases were reported with a fatality rate of 60 per cent. Seventy-six per cent of their cases were over 40 years of age. In 1927 and again in 1929, they had epidemics. The latter was the larger—2,000 with a fatality of 63 per cent[7-8].

The largest epidemic in Japan occurred in 1924, at the end of an unusually hot and dry summer. We have previously noted that our epidemic of 1933 occurred during comparable weather conditions, but to a less degree than in 1937. These observations cause much speculation regarding the influence of the weather in the production of the illness. It is well known that the wet, cold, bad months are conducive to epidemic meningitis, therefore, hot dry months may favor the dissemination of epidemic encephalitis.

Encephalitis of the summer type has also been reported from Australia. In January to April, 1917 (the late summer in the southern hemisphere), and again in 1918, a mysterious disease was reported by Breinl and called the Australian X disease[9]. About 100 cases were reported that carried a fatality of 70 per cent. The interesting thing about this epidemic is that cases were reported from remote out of the way places, hundreds of miles from metropolitan areas, but all of these widely scattered areas possessed a hot, dry climate. A similar epidemic was reported there in 1925, but of smaller proportions[10].

No summer type of encephalitis has been reported in Europe, South America or Africa.

The 1933 epidemic in St. Louis was preceded by 27 cases occurring in Paris, Ill., in 1932, during the months of August and September[11].

Since 1933, we feel the disease had been endemic in St. Louis. One of us (A.B.J.) saw in consultation in St. Louis and in nearby towns an occasional case of epidemic encephalitis in 1934. None was seen in 1935. One case was seen at the Barnes Hospital late in 1936.

Chart I shows the age and sex of our 134 cases, the youngest was 18 months, the oldest 94 years. In one instance more than one case occurred in the same family. This was in twin boys, age five. They were admitted to the hospital four days apart.

CHART I

Total Number of Patients 134

Age	0-5	5-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-
Number of each	2	9	9	16	10	13	20	32	17	6
*Number of females	1	1	3	9	7	7	8	17	6	4
†Number of males	1	8	6	7	3	6	12	15	11	2
Colored Patients	0	0	0	2	1	0	1	0	0	2

*Female patients 60 per cent.
†Male patients 40 per cent.

Earlier in the summer we, now and again, were making the diagnosis of epidemic encephalitis, St. Louis type. The first case occurred in May. These sporadic cases were admitted with a variety of diagnoses. Due to the presence of meningeal symptoms, the absence of other cases of encephalitis and the spinal fluid findings, we often diagnosed them, tentatively, tuberculous meningitis. Rapid recovery necessitated a change in the diagnosis to encephalitis. In the light of subsequent events (1937 outbreak) we know these cases were epidemic encephalitis, St. Louis type.

The first cases of the 1937 epidemic were reported to the County Health Department on July 12th, to the City Health Department, August 27th. By September 1st, a total of 11 to 13 cases were being reported daily until October 1st. Then there was a drop in the daily case report until October 7th, when again the number reported was 13. The fall and rise in the number of cases reported was concomitant with a cold snap with some precipitation the last days of September and the first few days of October. On October 5th, the weather became very warm again. Then after October 7th there was a rapid decline in the daily occurrence, the last case was reported on October 20th.

As in the previous epidemic, post mortem examinations here were attended by representatives from the Department of Pathology of Washington University Medical School. Dr. McCordock again recognized the etiological agent as being a filtrable virus, that was neutralized when mixed with the serum of a recovered patient, either of this or the '33 epidemic [12-12A].

Even though this St. Louis type is qualitatively the same as the Japanese type B, the work of Webster and Fite[13] show that the sera of Japanese B Type patients do not neutralize the St. Louis virus[14]. Webster and Fite have further shown that Epidemic of Encephalitis in Kansas City, Mo., in 1933, Paris, Ill., in '32, St. Louis in '33 and occasional cases in New York in 1933 were all of the same etiology, but cases reported in Indianapolis, Ind., in '33, were not of this category[15].

Pathological sections revealed significant changes only in the central nervous system, except for chronic changes in kidneys, heart, etc., found among the older age groups.

On gross examination were noted varying degrees of congestion of the meningeal and intracerebral vessels. The microscopic changes consisted of cellular infiltration, vascular congestion, haemorrhage and nerve cell degeneration.

The most striking microscopic change is a perivascular round cell infiltration, described as perivascular "cuffing." In scattered areas of the brain substance, focal collections of mononuclear cells could be seen. Often these focal areas contained some polymorphonuclear leukocytes and a degenerated nerve cell. These changes were present practically in every part of the brain. In some of the older individuals small foci of hemorrhages were seen with associated encephalomyelacia.

The protean nature of the disease is exemplified by a study of the prodromata, Chart II.

CHART II
PRODROMALS

Symptom	No. of Cases	% of Cases
Headache	99	73.1
Fever	74	55.2
Anorexia	5	3.7
Stupor	18	13.4
Dizziness	19	14.1
Head Cold	4	2.9
Delirium	5	3.7
Chills	14	10.4
Photophobia	1	.8
Staggering	2	1.4
Vomiting	23	17.1
Stiff Neck	21	15.6
Backache	6	4.47
Sleeplessness	3	2.2
Partial Paralysis	5	3.7
Nausea	8	5.9
Abdominal Pain	8	5.9
Lethargy	16	11.9
Diplopia	1	0.8
Ringing in ears	1	0.8
Pain in eyes	1	0.8
Sore throat	3	2.2
Syncope	1	0.8
Joint Pain	3	2.2
Post Partum	1	0.8
Incontinent	4	2.9
Coma	5	3.7
Dysphagia	1	0.8
Muscle pain	7	5.2
Twitchings and tremors	11	8.2
Drowsy	31	23.1
General stiffness	2	1.49
Diarrhea	2	1.4
General weakness	6	4.4
Convulsions	1	0.8

The prodromals of the 134 cases show that 73 per cent complained of headaches and 55 per cent of fever. Stupor occurred with the onset in 13 per cent of the cases. Lethargy occurred from the onset in 12

per cent of the cases. This speaks for the severity of the disease and the necessity of ruling out an epidemic form of meningitis. Another early common symptom was twitching with rigidity of muscles setting in rapidly, especially among the older age groups.

CHART III
NEUROLOGICAL FINDINGS

Symptoms	No. of Cases	% of Cases
Stiff neck	113	84.4
Koernig	51	38.
Brudzinski	8	5.9
Absent Abdom.	101	75.3
Absent cremasters	38	28.3
Absent K. K.	33	24.6
Absent ankle jerks	60	44.7
Spontaneous movements	15	11.2
Rigidities	72	53.6
Tremors	39	29.
Lethargy	75	55.9
Coma and stupor	62	46.25
Retention	7	5.2
Incontinent	51	38.
Paralysis	9	6.7
Diplopia	2	1.5
Strabismus	1	.7
Nystagmus	4	2.9
Absent biceps	4	2.9
Gordon	11	8.2
Oppenheim	12	8.9
Babinski	6	4.4
Hoffman	1	.7
Chaddock	1	.7

The neurological findings (Chart III) were quite varied, however, a stiff neck and absent abdominal reflexes were among the most common findings being manifest in 85 per cent and 75 per cent of the cases respectively. Lethargy was present in 56 per cent of the cases with coma and stupor in 46 per cent. Tremors involving the tongue, face, chin and lips as well as the hands and at times the entire arms, occurred in 29 per cent of the cases. Often these tremors were similar to those of Parkinson's Disease. Rigidity of the upper and lower extremities were noted in 54 per cent of the cases. Disturbance of the urinary bladder was often seen, 38 per cent of our patients being incontinent and five per cent showing acute retention. In those cases having weakness of an extremity we were always able to elicit tendon jerks. A child may not move an arm or a leg or both arms and both legs on admission, but if the extremity was raised by the examiner and released it did not fall like a flail, nor did the hands or feet lie in positions of flaccidity or limpness as in poliomyelitis. Foot and toe drop were absent. More frequently the thigh was externally rotated, slightly flexed, with the foot at right angles with the leg. There were no tropic changes. Within 48 to 96 hours the patient was using hands to feed itself, or walking around in the crib.

Laboratory work was of extreme importance in making a diagnosis. As is shown in Chart IV, 92 per cent of the cases showed a white blood cell count of between 5,000 and 15,000.

CHART IV
WHITE CELL COUNTS OF 134 CASES

Counts	No. of Cases	% of Cases
5,000 to 10,000	43	32.08
10,000 to 15,000	80	59.74
15,000 to 20,000	5	3.7
20,000 and over	5	3.7

The spinal fluid was always found to be under increased pressure. Chart V, shows only 15 per cent of the cases having a total spinal fluid cell count of over 200 cells per cu.m.m. Cell counts recorded over 300 we considered an error, red cells probably.

CHART V
SPINAL FLUID CELL COUNT, TOTAL OF 131 CASES

Counts	No. of Cases	% of Cases
* 0- 10	9	6.8
10- 20	10	7.6
20- 40	18	13.7
40- 60	23	17.5
60- 80	14	10.6
80-100	17	12.9
100-200	22	16.7
200-300	9	6.8
†300-	11	8.3

*Counts of 0-100 cells found in 91 cases or 69.1%.
†Five counts were between 1,000-2,000 cells—none over.

Differential cell counts of the spinal fluid Chart VI, showed 122 cases of 98 per cent, with 50 to 100 per cent lymphocytes. Only two cases showed a polymorphonuclear count of greater than 50 per cent.

CHART VI
LYNPHOCYTES IN SPINAL FLUID, TOTAL OF 124 CASES

% of Lymphs	No. of Cases	% of Cases
0- 20	0	.0
20- 50	2	1.6
50- 80	25	20.1
80-100	97	78.3

In Chart VII, the Pandy test is shown to be positive in 77 per cent of the cases.

CHART VII
PANDY TESTS OF 128 CASES

	No. of Cases	% of Cases
Positive	99	77.3
Negative	21	16.4
Questionable	8	6.3

Spinal fluid sugars were done routinely with blood sugars. In practically all cases

the spinal fluid sugar was not diminished, being 50 per cent or more of the blood sugar as is shown in Chart VIII.

CHART VIII
SPINAL FLUID SUGAR IN MG. PER CENT
TOTAL OF 127 CASES

Mg. %	No. of Cases	% of Cases
0- 15	0	.0
15- 30	1	.8
30- 45	7	5.5
45- 60	37	29.1
60- 75	39	30.7
75- 90	23	18.1
90-105	10	7.8
105-115	10	7.8
115-up	0	.0

The mortality is listed for age groups in Chart IX, with a total mortality of 22.38 per cent for all ages. It is interesting to note the tremendous mortality in the older individuals. However, one death occurred in the five to ten age group and one in the 20 to 30 age group.

A total of 86, or 64 per cent of our patients left the hospital normal; 14 per cent with residuals. A total of 80 per cent of these residuals were mental dullness found especially among the older age groups (Chart X).

Two of our children were discharged with muscle weakness. One of these was a twin mentioned above. The twins were recently examined (four months after discharge) and were found to be entirely without residuals. The other child discharged with weakness of the left arm and leg still shows a limp in the left leg, but power in the left arm has returned. The muscle tone in the left arm and leg is subnormal. The eight-year-old boy discharged with the eye muscle paralysis showed no evidence of strabismus four months later. The eye movements were entirely normal. He is wearing glasses for correction of an astigmatism.

Epidemic encephalitis, St. Louis Type, is an acute infectious systemic disease, caused by a filtrable virus, that has a predilection for the nervous system, particularly for the brain and meninges. Probably a great number of cases show the systemic phase only. Either the infection is so mild or the resistance of the patient is so great that neurological signs do not appear. However in these cases, invasion of the nervous system has been demonstrated by the presence of lymphocytes, globulin, and other changes in the spinal fluid.

The disease occurs chiefly in the late summer and early fall (July, August and September). As in epidemic meningitis, weather conditions appear to be a factor in precipitating the disease.

In the 1937 outbreak the onset of the illness was less abrupt than in the 1933 epidemic[16]. The prodromal period on the whole was much longer and the total duration of the disease in the main covered a longer period of time. In 1933, it was not unusual to see an abrupt fall in the temperature, or a near crisis. In all our cases

CHART X
STATE ON DISCHARGE

SYMPTOM	No. of CASES	% of CASES
NORMAL	86	64.1
MENTALLY DULL	11	8.6
PSYCHOSIS	1	
MUSCLE WEAKNESS	2	
RETENTION	1	
GAIT DIFFICULTY	1	
EYE MUSCLE PARALYSIS	1	
TWITCHING	1	
INCONTINENT	1	
DEATH	30	

14.1 % with residuals

CHART IX
MORTALITY

Age	0-5	5-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-
*Deaths per age group	0	1	0	1	0	2	3	7	11	5
Per cent of deaths per age group	0	11.11	0	6.5	0	15.38	15	21.87	64.7	83.33
Number male deaths	0	1	0	1	0	0	2	5	8	3
Number female deaths	0	0	0	0	0	2	1	2	3	2
†Negro deaths	0	0	0	1	0	0	0	0	0	1

*Total deaths 30, or 22.38 per cent.
†Total colored admitted 6, or 4.47 per cent of total admissions.

in 1937, the fever persisted for a longer period of time, falling by lysis. But, as in the 1933 epidemic, the duration and severity of the illness was extremely variable, from a few days to two or three weeks. The most common type of case was one giving history of generalized headache, fever, nausea and vomiting, and some mental disturbance that had been present from one to 14 days. On admission temperatures varied from 102 to 105; pulse rate from 80 to 120; stiff neck and Koernig sign; drowsiness, stupor or confusion. Lumbar puncture in such cases revealed the findings as in Charts IV, I, and VI.

However, many cases had such complaints as pronounced malaise, anorexia, chills or chilly sensation, grippal aches all over or excruciating pains in the back and legs. Examination revealed some or all of the neurological signs. This is the type of case with a long period of invasion. It was not unusual for such a type of case to have a tentative diagnosis of typhoid fever on account of the relatively high temperature, slow pulse and moderately low leukocyte count with a slight shift to the left.

General rigidity of the body, spontaneous movements, tremors, lightening-like movements of the eyes, weakness to paralysis of an extremity or extremities were more commonly seen and a more prominent feature than in the epidemic of 1933. One of our more severe cases to recover did not have headache at any time during the illness. The onset was rather sudden, with fever, terrific backache, pains and a feeling of weakness in the thighs and legs. By the fourth day of the illness her temperature reached 106, pulse rate varying from 80 to 120. After three days the temperature gradually fell by lysis with an increase in the pulse rate. In only one case was the illness ushered in by a convulsion. This is in contrast to its frequency, especially in children, in the 1933 epidemic.

The neurological signs were inconstant, Chart X. In the milder cases, aside from headache, there may be neurological findings. Stiff neck, Kernig sign, absent abdominal reflexes and absent ankle jerks are the common findings. All of these may be present in the same case or there may be only a stiff neck with any one or more of the neurological findings. Wax-like rigidity of all the muscles was a frequent finding. Any or all combinations of the neurological findings enumerated in Chart X may have been present at one time or another. In other words, there is no pathognomonic neurological picture diagnostic of this disease.

In the milder cases there was no disturbance in the sensorium. Some clouding of consciousness, disorientation for short periods of time, muttering and picking at the bed clothes were present in the moderately severe cases. In the more severe cases, stupor and coma, with complete amnesia for many days of the illness were common. Especially in the older patients, even after the temperature had returned to normal, many appeared bewildered or confused; they were dull, did not initiate conversation, answered hesitantly in monosyllables. There were a few cases of psychoses characterized by confusion, disorientation, illusions, delusions and poor retentive memory lasting for a few days to two or three months.

Typical case histories are as follows:

Case I

D. C. A 24-year-old white female admitted on 9-12-37 with the history of being perfectly well until 9-8-37 when she developed a terrific generalized headache. The following day she developed a stiffness of the neck and became drowsy. Her temperature was 101° F. She was admitted to City Hospital No. 1 on 9-11-37 and transferred here the following day. On admission she still complained of her headache, appeared slightly drowsy, temperature was 98° F., pulse normal. Neurological examination revealed a bilateral Kernig, absent abdominal reflexes, sluggish patellars, absent right ankle jerk and sluggish on the left. The neck was definitely stiff. On 9-13-37 temperature went to 100.6° F., but by 9-15-37 she was entirely temperature free and symptom free and remaining so until discharge. Laboratory findings on admission showed the spinal fluid to be under increased pressure, but clear, only 28 cells being present with 95 per cent of these being lymphocytes. Spinal sugar was 73 mg. per cent and blood sugar 107 mg per cent. Pandy was positive, Kahn negative, spinal fluid culture showed no growth, W.B.C. count was 10,800 differential was St. 4, Segs. 60, Ly. 32, Mon. 4.

Case II

M. W., age 65, white female admitted 8-27-37 with a history of onset with general malaise and aches and pains lasting four days occurring two weeks before admission. These symptoms were replaced by a "pressure headache" ("head in a vise") and fever. Her neck became stiff and has remained so ever since. She had been nauseated for one week and vomitted daily until day of admission. For three days she had a urinary retention but had been voiding for two days previous to her admission. On admission her temperature was 102-4° F., pulse 96. Rational and conscious. Neck was moderately stiff, abdominal reflexes absent, Kernig was positive bilaterally. A bilateral Oppenheim and Gordon was present and Babinski on the right. The headache and nausea persisted along with a temperature that fluctuated to a 102-6° F. daily until

9-4-37 when her symptoms started subsiding and was normal by 9-6-37. On admission her laboratory work showed W.B.C. 11,650, spinal revealed an increase in pressure, fluid clear with 31 cells being 100 per cent lymphocytes. The spinal sugar was 55 mg. per cent, the blood sugar 98 mg. per cent, spinal fluid showed no growth, urine negative. She was discharged 9-9-37, symptom free.

Case III

H. K., age 67, white female, admitted 8-31-37 with a history of being perfectly well until Saturday night, 8-28-37, when she developed a chill and a severe headache. Generalized aching and weakness followed. On admission, she appeared stuporous but restless. Her musculature showed a slight rigidity of the extremeties. Tremors of the tongue and chin were marked. Her neck was not stiff. Abdominal reflexes, ankle jerks and patellar reflexes were all absent. Her temperature remained elevated as can be seen by the accompanying graph. Rales and an irregular pulse developed, but following digitalization these cleared. Following her return to a normal temperature, her tremors disappeared. Reflexes were all present on discharge. She was sent out on a maintenance dose of digitalis and asked to report to the Cardiac Clinic at City Hospital No. 1. Laboratory findings on admission showed the spinal fluid to be clear but under slight increase in pressure. Three hundred and fifty cells were present, 80 per cent being lymphocytes. Pandy was positive, spinal fluid sugar was 32 mg. per cent, the blood sugar was 75.5 mg. per cent, the Kahn negative, spinal fluid culture revealed no growth. W.B.C. were 11,050, St. 10, Seg. 79, Ly. 8, and Eos. 2.

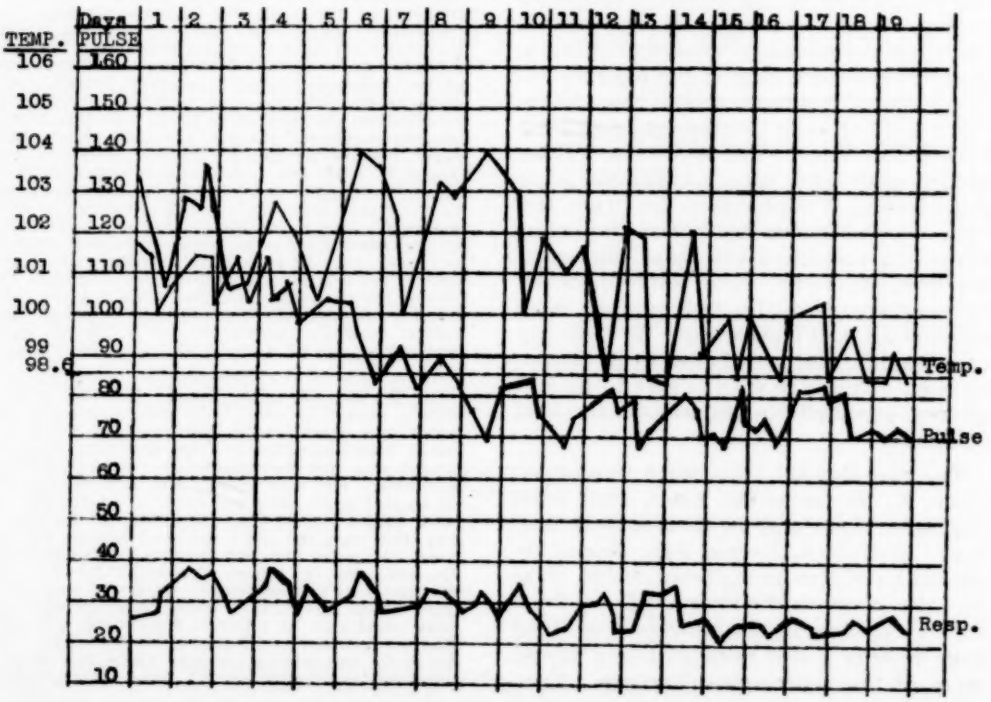
Case IV

A. H., white male, age 71, admitted 9-4-37 with a history of an acute onset one week before admission with malaise, chills, fever. He became rapidly stuporus and coma being progressively deeper for two days previous to admission. The day of admission he had a convulsion and a stiff neck was noted at that time. On admission he was in a deep coma, his temperature 104.4° F., pulse was 80. Neck stiff. Moisture in both lung bases. Koernig positive bilaterally, abdominal and cremasterics absent, but all other reflexes present. He seemed to improve somewhat with temperature coming down slowly, but on 9-9-37 a most peculiar movement of the eyes was noted. This "nystagmus" had a vertical, lateral and rotatory component. The above mentioned pulse, temperature ratio persisted as well as lethargy, "nystagmus" and the neurological findings previously mentioned. The patient expired on 9-14-37. Laboratory work on admission revealed the spinal fluid clear and under moderate pressure. Eighty-eight cells were present, 85 per cent being lymphocytes. Pandy was negative, spinal sugar 72 mg. per cent, blood sugar 175 mg. per cent, urine negative, W.B.C. 9,600, J. 1, St. 8, Seg. 58, Ly. 32, Mon. 1, cultures were negative, Wasserman of blood and spinal fluid were negative. We might add here that this peculiar movement of the eyes was seen in a total of three cases. Two recovered.

Diagnosis. An examination of the charts readily indicates a lack of pathognomonic diagnostic criteria either as to symptoms, signs, blood picture, spinal fluid changes or course of the illness. The diagnosis must be built as a house, stone by stone, putting those together that fit and eliminating others. In the differential diag-

CHART XI

CLINICAL CHART—TYPICAL TEMPERATURE—PULSE—RESPIRATORY CHART



nosis one must eliminate influenza, malaria, typhoid fever, tuberculous meningitis and other forms of encephalitis, including the erroneous admission diagnoses mentioned above.

Prognosis. In the usual case, recovery was surprisingly rapid and complete. In the majority of the cases the temperature was normal within 12 to 18 days of the onset and the patient by that time was obviously well on the road to recovery. In the milder abortive cases within a much shorter period of time, three to seven days, the patient was quite well again or nearly so. When death occurred, it was the death of an overwhelming toxemia. More than 50 per cent of the deaths in our series occurred within the first seven days of the illness.

Age influenced the prognosis more than any other single factor. Pre-existing organic diseases such as nephritis, heart disease or debilitated state generally were factors tending towards a fatal termination.

No single sign or symptom was of much prognostic significance. The development of bronchial pneumonia was a grave prognostic sign.

Treatment. The treatment was entirely symptomatic. Practically all of the lethargic and stuporous patients had to be restrained. Strange as this statement may appear, without warning these patients often would get out of bed and walk about in an aimless manner. Hypertonic glucose (20 per cent) was used daily on all patients so long as lethargy and coma persisted. All other supportive measures such as digitalization and oxygen were instituted when necessary. The initial lumbar puncture often relieved headache and other symptoms. Subsequent punctures were done infrequently, and only when there was evidence of increased intracranial pressure which intravenous glucose would not control. Sedatives were rarely used. Among the older patients, we preferred large doses of strychnine sulphate to bromides and barbiturates.

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Effects of 'Benzedrine Sulfate' on Problem Children

Bradley (Am. J. Psych. 94:577, Nov., 1937) reports on the effects of "Benzedrine Sulfate" (benzyl methyl carbinamine sulfate, S.K.F.) administered to a group of 30 "problem" children, aged five to 14 years, under very favorable conditions.

The children chosen for the study manifested various behavior disorders, ranging from specific educational disabilities to the retiring schizoid type and the aggressive egocentric epileptic. They were observed, without subjective questioning, by a special psychiatric nurse for a period of three weeks. Each child received a daily morning dose of "Benzedrine Sulfate" during the second week, the first and third weeks being regarded as control periods. Twenty mg. was the usual dose, but this varied according to the individual.

Although these children had been receiving the usual intensive training available at the Bradley Home, 14 of them, or 47 per cent, promptly "responded in a spectacular fashion" to "Benzedrine Sulfate" therapy, showing marked improvement in speed of comprehension and accuracy of performance, together with a keen desire for accomplishment. Eight others showed some improvement. In all cases improvement disappeared the first day therapy was discontinued.

In emotional response, 15 children, or 50 per cent, became subdued. Seven of these were of the erratic and aggressive type, and the author suggests that "Benzedrine Sulfate," by stimulating the higher centers, may increase voluntary control in such cases. Seven other children reported a definite euphoria. The remaining eight had varied responses. One case of agitation and two cases of anxiety were observed.

In spite of the "attractive results obtained . . . and the apparent low toxicity of the drug," the author concludes that it is too early definitely to recommend "Benzedrine Sulfate" in the general treatment of pediatric behavior problems, and that additional studies should be made in this field.

Summer Diarrhea In Babies

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with eight level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casec gradually eliminated. Three to six teaspoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

PRESIDENT, 1938-39

DOCTOR HENRY KIRVIN SPEED

Born, 1884

Graduated from the University of Texas School of Medicine, Galveston, 1906

Engaged in the Practice of General Medicine

THE JOURNAL
OF THE
Oklahoma State Medical Association

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DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma

DR. T. H. McCARLEY.....Associate Editor
McAlester, Oklahoma

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in The Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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EDITORIAL

In the April issue of the Journal the Secretary-Treasurer-Editor's report was published. It was delivered to the Council and House of Delegates and discussed. In this report are shown the activities of the State Association during the past year and there are some outstanding features. One being that we have liquidated $2,000.00 of our indebtedness, this in spite of the fact that we loaned the Legislative Committee $3,800.00 from the General Fund. The Council has appropriated $2,000.00 this year for carrying on our Post Graduate program in Obstetrics. This was made possible by the work of our Committee on Post Graduate Medical Teaching and being able to acquire funds from Federal Appropriations to the State Health Department and a large contribution from the Commonwealth Fund.

For the first time in the history of the publication of our Journal it has been possible to pay the expense of publication from funds acquired from our advertisers and we will probably be able next year to slightly increase the amount of reading material in each issue of the Journal. This increase in income from advertising has not been accomplished by taking any questionable advertisements, as there is nothing advertised in the Journal, or exhibited at our Annual Meetings which has not been acted favorably on by the Council of the American Medical Association.

It is to be hoped that much will be accomplished by the House of Delegates during the Annual Meeting and a report of the proceedings will be published in the June issue, it being impossible to get the material in shape for publication this month.

We will look forward to a year of even greater accomplishment and with the continued cooperation of our officers and committee members there is no evident reason why our new President should not have a very satisfactory administration.

Editorial Notes—Personal and General

At the meeting of the Board of Regents of the University of Oklahoma on the 4th instant, the following promotions and appointments were made upon the recommendation of the Dean of the Faculty of Medicine:

Appointments:

Carl William Lindstrom, assistant in obstetrics.
Joseph Fife Messenbaugh, assistant in surgery.
Paul Jack Birge, assistant in surgery.
Raymond Delbert Watson, assistant in surgery.
Neil Whitney Woodward, assistant in surgery.
Tom Lyon Wainwright, assistant in surgery.
Virgil Roy Jobe, assistant in surgery.
Cannon Armstrong Owen, assistant in surgery.
Everett Baker Neff, assistant in surgery.
Louis Najib Dakil, assistant in medicine.
Charles Andrew Smith, assistant in medicine.
Harry Linnell Deupree, assistant in medicine.
William Knowlton Ishmael, assistant in medicine.
Joe Henry Coley, assistant in medicine.
Harry Cummings Ford, assistant in oto-rhino-laryngology.
Melvin Phillip Hoot, assistant in oto-rhino-laryngology.
August Malone Brewer, assistant in urology.
Minard Friedberg Jacobs, instructor in medicine.
Dan Roy Sewell, lecturer in surgery.
Austin Halloway Bell, lecturer in surgery.

Changes in rank and title:

Hull Wesley Butler, assistant in histology and embryology to associate in medicine and associate in histology.
James Patton McGee, assistant professor of oph-

thalmology to associate professor of ophthalmology.

Bert Fletcher Keltz, instructor in medicine to associate in medicine and supervisor of clinical clerkships.

Walker Morledge, instructor in medicine to associate in medicine.

Elmer Ray Musick, instructor in medicine to associate in medicine.

James Floyd Moorman, instructor in medicine to associate in medicine.

Frederick Redding Hood, instructor in medicine to associate in medicine.

James Garfield Binkley, instructor in obstetrics to associate in obstetrics.

Francis Asbury DeMand, instructor in obstetrics to associate in obstetrics.

Floyd Gray, instructor in obstetrics to associate in obstetrics.

George Harry Garrison, instructor in pediatrics to associate in pediatrics.

Ben H. Nicholson, instructor in pediatrics to associate in pediatrics.

Louis Harry Charney, instructor in medicine to associate in medicine.

Herman Fagin, instructor in medicine to associate in medicine.

Nesbitt Ludson Miller, instructor in medicine to associate in Medicine.

William Ward Rucks, Jr., instructor in medicine to associate in medicine.

Wilbur Floyd Keller, instructor in medicine to associate in medicine.

Joseph C. Macdonald, assistant professor of oto-rhino-laryngology to associate professor of oto-rhino-laryngology.

Ephriam Goldfain, instructor in neurology to associate in neurology.

Francis Edward Dill, instructor in gynecology to associate in gynecology.

Joseph Willard Kelso, assistant professor of gynecology to associate professor of gynecology.

Ellis Moore, instructor in urology to associate in urology.

Robert Howe Akin, instructor in urology to associate in Urology.

Stanley Francis Wildman, instructor in urology to associate in urology.

Donald Wilton Branham, instructor in urology to associate in urology.

Patrick Sarsfield Nagle, assistant in surgery to lecturer in surgery.

Fenton Almer Sanger, assistant in surgery to lecturer in surgery.

Oscar White, assistant in surgery to lecturer in surgery.

Clifford Cannon Fulton, assistant in surgery to lecturer in surgery.

Jesse Duval Herrmann, assistant in surgery to lecturer in surgery.

George Henry Kimball, assistant in surgery to lecturer in surgery.

John Powers Wolff, assistant in surgery to lecturer in surgery.

Carl A. Bunde, research fellow in physiology to instructor in physiology.

Dr. Bert Fletcher Keltz, associate in medicine, was advanced from an associate to full Fellowship in the American College of Physicians at the meeting held in New York City, April 4th to 8th, 1938.

Robert U. Patterson, M.D.,
Dean and Superintendent.

SOUTHEASTERN Oklahoma Medical Association had an all-day session at Durant, Tuesday, April 26, the meeting being called to order promptly at 10 a.m. Morning and afternoon programs had been prepared and were carried out as follows: Scientific Program—10 a.m., "The Management of Empyemia," Dr. J. T. Wharton, Durant, Okla.; 10:45 a.m., "Urinary Complications of Pregnancy," Dr. A. R. Russell, McAlester, Okla.; 11:30 a.m., "The Acute Abdomen as Seen by the General Practitioner." Dr. Earl M. Woodson, Poteau, Okla. Luncheon, 12:15 p.m. at First Methodist church. Program resumed at 1:30 p.m.: 1:30 p.m., "Invocation," Rev. W. L. Broome, Pastor, First Methodist church, Durant, Okla.; "Welcome Address," Dr. Jas. L. Shuler, Durant, Okla.; "Response to Welcome Address," Dr. J. L. Fulton, Atoka, Okla.; 2:00 p.m., "President's Address," Dr. E. H. Shuller, McAlester, Okla.; 2:15 p.m., "Modern Conception of Arthritis with Lantern Slides," Dr. N. D. Buie, Marlin, Texas; 3:15 p.m., "State and National Medical Legislation," Dr. Louis H. Ritzhaupt, Guthrie, Okla.; 4:15 p.m., Annual Election of Officers.

The Chamber of Commerce, Ketchum, Oklahoma, advises that there is a good opening for a young physician to engage in practice in that town and area. They estimate that from 10,000 to 15,000 people will be located in that town within the next six months. At the present time the population is 1,500. Ketchum is located sixteen (16) miles from Vinita, Oklahoma.

Dr. HENRY TURNER, of Oklahoma City, presented a preliminary report on "The Clinical Use of Male Sex Hormones" before the American Therapeutic Society in New York, April 1-2. He was also guest speaker of the St. Joseph Clinical Society, St. Joseph, Missouri, on April 14, addressing the Society on "The Diagnosis and Treatment of Endocrine Disorders."

DOCTOR PAUL C. COLONNA, Professor of Orthopaedic surgery in the University of Oklahoma School of Medicine and Orthopaedic Surgeon to the University and Crippled Children's Hospitals, Oklahoma City, will read a paper before the American Orthopaedic Association in Atlantic City, New Jersey, May 3rd, 1938, entitled "Operative Procedure for Congenital Dislocation of the Hip." He will also read a paper entitled "Reconstruction Operation for Ununited Fractures of the Hip" before the New York State Medical Society in New York City, May 10th, 1938.

Dr. J. Samuel Binkley, formerly of Oklahoma City, who now has a Fellowship in Memorial Hospital, New York City, appeared on the program of the American Association for Thoracic Surgery on April 4th at Atlanta, Georgia. His subject was "Aspiration Biopsy of the Lung," discussed by Dr. Singer, St. Louis; Dr. Dan Elkins, Atlanta; Dr. Jerome Head of Chicago, and a number of others.

News of the County Medical Societies

CARTER County Medical Society met at Colvert Auditorium, Ardmore, Monday night, April 25, 1938. The program of the evening consisted of talks by physicians, as follows: "Peptic Ulcer," Dr. R. C. Sullivan, Ardmore; "Sulfanilamide," Dr. Fred Perry, Healdton; "Physical Therapy Correlated with Medical Treatment of Arthritis," Dr. William A. Ishmael, Oklahoma City; "Orthopedic Correction of the Deformed Joints in Arthritis," Dr. Howard B. Shorbe, Oklahoma City.

OKMULGEE-OKFUSKEE County Medical meeting was held at the Okemah Hotel, Okemah, Monday evening, April 18, 1938, with dinner at 6:30 p.m. The speakers were Dr. Wendell Long, Oklahoma City, whose subject was "Practical Aids in Pelvic Examinations," and Dr. Basil A. Hayes, Oklahoma City, on "Changes in the Upper Urinary Tract Due to Pelvic Pathology."

News Notes of Woman's Auxiliary

Women's Auxiliary to Woodward County Medical Society

The counties of Woodward, Ellis, Harper, Beaver and Dewey are organized under the name of the Woodward County Medical Society.

The Auxiliary meetings are held at the same time and place as that of the Medical Society.

Beginning with February, meetings are held each alternate month in the year, the August meeting being an annual picnic on Crystal Beech Lake in Woodward.

The Advisory Board to the Women's Auxiliary is: Dr. John L. Day, Supply, Dr. C. W. Tedrowe, Woodward, and Dr. J. C. Duncan, Forgan.

The February meeting was held in the Baker Hotel in Woodward, members paid dues, elected the following officers for the ensuing year: Mrs. D. W. Darwin, Woodward, president; Mrs. T. S. Leachman, Woodward, vice-president; Mrs. C. W. Tedrowe, Woodward, recording secretary; Mrs. H. K. Hill, Laverne, corresponding secretary, and Mrs. O. C. Newman, Shattuck, treasurer.

Other business was omitted and after a turkey dinner both groups were entertained by an interesting and instructive paper on Socialized Medicine read by Dr. C. J. Fishman of Oklahoma City: Dr. Basil Hays, also of Oklahoma City, gave an illustrated lecture on Urology. Several of the doctors present commented on these lectures.

The April meeting was held in Laverne. The Ladies Aid served a chicken dinner in the dining room of the Masonic Hall, after which the Auxiliary retired to the lobby of the hotel. The president, Mrs. D. W. Darwin, brought before the group a number of leading policies in which Auxiliaries can be of service to the Medical Societies.

These projects were discussed by the members. It was voted to maintain a Speakers Bureau. These speakers are to be appointed by the Advisory Board and are to be members of the Woodward County Medical Society. Through their public relations with clubs, Parent Teachers Association and other organizations, the Auxiliary members hope by this method to bring directly to many persons much valuable health instruction, which they otherwise would have no opportunity to receive.

Mrs. F. C. Camp of Buffalo was appointed chairman of Philanthropy committee, Mrs. C. E. Williams of the Hygeia, and Mrs. Hardin Walker, Rosston, chairman of Public Relations and Health Education.

Mrs. N. E. Duncan, Forgan, Press and Publicity and Mrs. O. C. Newman of Shattuck, Historian.

Delegate to the State Meeting in May Mrs. N. E. Duncan, alternate Mrs. John L. Day.

RESOLUTIONS

Jackson County Medical Society, March 28, 1938
Dr. R. H. Mays

WHEREAS our friend and esteemed co-worker, Dr. R. H. Mays has been called by the Great Physician, and

WHEREAS for many years he was a prominent and active member of our Society and our profession, and

WHEREAS his professional achievements, and sterling qualities were known and admired both within and without the profession,

Therefore, Be It Resolved, by the Jackson County Medical Society that we record our sadness and in his untimely going, holding in memory his splendid skill and wonderful personality as a professional man, a loving and generous husband and father, an active leader, a high class citizen and withal, kindly and generous, and

Be It Further Resolved, That a copy of these resolutions be spread upon the minutes of the Jackson County Medical Society and that a copy be sent to the members of the family, and that official copies be sent to the Journal of the Oklahoma Medical Association.

Respectfully submitted,

Edw. A. Abernethy, M.D.,
J. B. Hix, M.D.,
Raymond H. Fox, M.D.,
Committee on Resolutions.

Doctor William Irwin Joss

Whereas, Our fellow member and friend, Dr. William Irwin Joss, of Erick, Okla., who was a highly respected member of the Beckham County Medical Society, was called from us on February 23rd, 1938, and;

Whereas, Dr. Joss for many years has been a member of organized medicine and a valued member of our society, and has rendered most valued service to his profession, and has been recognized by the doctors of this county and state as one of the most beloved members of the medical profession.

Therefore be it resolved, that we extend to his family our deepest sympathy and assure them of our sincere desire to share with them this burden of loss, and

Be it further resolved, that we receive this information with deep sorrow and regret, realizing our loss in both counsel and advice, and Be it further resolved, that a copy of this resolution be made a part of the minutes of this meeting, and be published in the Journal of the Oklahoma State Medical Association, and that a copy be sent to the family.

Signed, G. H. Stagner and P. J. Devany, committee.

Books Received and Reviewed

THE MANAGEMENT OF THE SICK INFANT AND CHILD, By Langley Porter, B.S., M.D., M.R.C.S. (Eng.), L.R.C.P. (Long.), Dean, University of California Medical School and Professor of Medicine; Formerly, Professor of Clinical Pediatrics, University of California Medical School; Visiting Pediatrician, San Francisco Children's Hospital; Consultant to the San Francisco Department of Public Health, San Francisco, California. AND, Dr. William E. Carter, M.D., Director, University of California Hospital Out Patient Department; Formerly, Chief of Children's Clinic, University of California Hospital, San Francisco; Attending Physician, San Francisco Hospital; Attending Physician, Los Angeles County Hospital, San Francisco, California. Fifth Advised Edition. Price $10.00. The C. V. Mosby Co., St. Louis, 1938.

This is the fifth edition of a well known book on the management of the sick infant. Some of the methods of management applicable to older children as well as to infants have been added.

Part I deals mainly with symptoms, vomiting, diarrhea, constipation, nutrition, hemorrhage, pain and tenderness, convulsions and syncopes, fever, cough and prematurity. Part II deals with diseases of the different systems of the body. Part III deals with methods, formulas and recipes, drugs and poisons. The methods are well illustrated by pictures.

This is one of the better books on pediatrics and should be of great help to the pediatrician, general practicioner and medical student in their work.

ABSTRACTS : REVIEWS : COMMENTS *and* CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Ulcerating Stenosis of the Pylorus and Its Complications (La Stenose Ulcereuse du Pylore et Ses Complications). By J. E. Dube, Medecin de l'Hotel Dieu, Montreal. L'Union Medicale du Canada, April, 1938.

A plasterer 26 years of age was admitted to hospital January 24, 1938, because of grave digestive troubles (des troubles digestifs graves) beginning about December 15, 1937. He was pale, emaciated, weak, able to take only a little liquid food because of bad digestion and abundant vomiting (a cause de sa mauvaise digestion et de vomissements abondants).

Palpitation of the epigastric area was accompanied by splashing (clapotage). A stomach tube was followed by the escape of a large quantity of dirty fluid containing particles of undigested food.

There was a history of "stomach trouble" for about a year before the grave attack beginning in December, 1937. There had been pyrosis and epigastric pain an hour or two after food and sometimes vomiting. At first alkalies or small quantities of food brought relief. Every few months there were exacerbations in connection with overwork.

After an investigation, including an X-ray G. I. series and various laboratory tests, there was a diagnosis of stenosis of the pylorus with retention due to an old ulcer. This period of investigation covered about a week, and then he was sent to surgery for operation. At this time there was an Hgb. of 58 per cent, R. B. C. 3,840,782. It was decided to do a gastro-enterostomy the next morning, but during the night there was collapse with abundant sweating, a pulse of 158 and a tendency to faint (tendance syncopale). A blood count the next day or two showed Hgb. 25 per cent, R. B. C. 2,989,845, W. B. C. 10,155. There were repeated transfusions of blood, but the course was relentlessly downward. On February 11, 1938, Hgb. 20 per cent, R. B. C. 1,750,000. On February 14, 1938, Hgb. 18 per cent, R. B. C. 1,675,000.

Then it was decided to operate because it was reasoned that only an operation would offer a last chance. ("Le malade parait voue a une mort certaine. Faut-il l'operer quand meme? Certes si l'on veut lui offrir une derniere chance.") Operation—gastroenterostomy—was done February 15. He was kept alive until February 22. The last blood count on February 21 showed Hgb. five per cent, R. B. C. 775,000.

Autopsy confirmed the preoperative diagnosis, **and, in addition, there was a ramification of arteries in the ulcerating area, all of them filled with thrombi** (une grosse ramification arterielle thrombosee).

Comments: This article is abstracted, not because the situation is very uncommon, but because important lessons are to be learned from it, to-wit:

1. When the pathology is so clear and the patient in fair condition would it not be the better part of wisdom to decide to operate as soon as the necessity for operation is obvious? Not within a week, but within a day or two. The author speaks of this, and indicates that there was unnecessary delay in connection with the radiographic examination. In the practice of medicine we ought to strive to develop a fine and accurate discrimination touching the promptitude with which service is rendered in the case of a patient manifestly in immediate need of saving management.

2. Following the collapse a week after admission there were repeated transfusions of blood in addition to the intravenous employment of other fluids. Notwithstanding these intravenous injections there was rapid depletion. Why? Because there was bleeding at the site of ulceration. Doubtless there were attempts at thrombosis in the bleeding vessels, but the thrombi were broken down by temporarily raising the arterial tension through the use of the intravenous fluids. In such a desperate situation would it not be far better to give the patient enough morphine to keep him perfectly comfortable **and perfectly quiet,** discontinuing intravenous fluids altogether?

3. Is it wise to undertake an intra-abdominal operation, or any other major operation, for that matter, where the Hgb. is 18 per cent and the R. B. C. 1,675,000 due to hemorrhage unless there is every reason to believe that bleeding can be controlled by the operative procedure? With the operation planned for this purpose—i.e., the control of hemorrhage—then it would be wise to accompany the operation by an intravenous infusion of normal saline solution to temporarily hold up arterial tension, and to follow the operation by transfusion of blood to maintain arterial tension.

LeRoy Long.

Continent Gastrostomy and Cardiospasm (Gastrostomie Continente et Cardiospasme). By Francois De Martigny, chirurgien consultant, hospital Sainte-Jeanne-D'Arc, Montreal. L'Union Medicale du Canada, April, 1938.

Remarking that the average case of cardiospasm yields to medical treatment, and deploring the bad results following the dangerous surgical operation usually advised in a rebellious case, the author is convinced that the pathology is represented by ulceration or fissures in the cardiac opening—i.e., at the junction of oesophagus with stomach—and he likens the lesions to anal fissures.

The thesis of the author is that the ulcerations or fissures will heal if relieved of irritation by the passage of food or other material over them. Acting upon this hypothesis, he conceived the plan of performing a "continent" gastrostomy so that food might be introduced directly into the stomach, the gastrostomy permitting, at the same time, the introduction of antiseptic and analgesic agents. In this way both the oesophagus and the cardia are placed at complete rest.

There are two case reports:

1. A blacksmith who complained of dysphagia, regurgitations and vomiting when the least food was swallowed, pains, and a weight loss of 50 pounds, all these symptoms gradually but progressively developing over a period of about two years. Emaciation extreme, skin dry and scaly, earthy

complexion, sunken eyes, pains on palpation over solar plexus area (douleurs a la palpation au point solaire).

A continent gastrostomy (gastrostomie a lambeau tubulee) was done under ether anesthesia, a "radio knife" (bistouri electrique a ondes entretenues) being employed.

There was rapid improvement. Within a short time there was tentative feeding by mouth. The gastrostomy opening closed between two and three years after operation, and the patient was well and strong.

2. An unmarried woman of 48 came complaining of digestive disturbances and of attacks of regurgitation at irregular intervals (elle souffre de l'estomac avec des crises de regurgitations a intervalles irreguliers) following carbon monoxide poisoning two years before. She had had an examination some months before at another hospital where a gastroscopy was done, the report being that visualization did not disclose any evidence of important pathology. She had never had intense pain, but there had been vomiting of small quantities of blood for some days following the gastroscopy, and there had been great loss of weight.

Radiographic examination after the ingestion of an opaque meal disclosed evidences of obstruction in the lower third of oesophagus, and the radiologist reported cancer of the inferior third of oesophagus. This diagnosis was rather reluctantly accepted by the author. The next day a continent gastrostomy was done under local anesthesia. This was followed by a high caloric diet (milk, malted milk, yolk of egg) per gastrostomy tube, and anyodol was given by mouth in doses of several drops at a time. A month later there was increase of weight and she was able to drink milk and Vichy water without difficulty. Three months later the condition was transformed, there not being any more regurgitation. Vegetable puree and cereal gruels were added to the diet by mouth, they being swallowed without trouble. At the end of another month there had been a gain in weight of 48 pounds.

Another radiographic examination showed that there was still slight narrowing of lower part of oesophagus, but there were no irregularities of oesophagus or about the oesophageal opening into stomach. The radiologist (the same who had made the first interpretation) now reported: "The lesion formerly demonstrable, of irregular aspect, has completely disappeared." ("La lesion anterieurement constatee, d'aspect irregulier, est completement disparue.")

Two years later the patient was able to eat and to swallow normally, and the condition was good in every respect. It was quite clear that the radiographic diagnosis of cancer was an error.

In the comments following these reports the author takes pains to say that continent gastrostomy is not a panacea for cardiospasm. At the same time the different methods of treatment heretofore proposed are briefly reviewed, and in the review attention is directed to the uncertainty and danger attendant upon the blind introduction of sounds; to the harm that is reportedly done in attempts at manual or instrumental dilatation per gastrostomy opening; and to the extreme danger in connection with incisions and sharp dissection about the gastro-oesophageal area. The dangers are contrasted with the relatively small danger associated with gastrostomy.

Comments: This is a very practical, very reasonable and a very valuable contribution. While, as the author, himself, indicates, the exact pathology in the cases reported was not proved, the reasoning employed is sound and leads to the logical conclusion that the suggested analogy between cardiospasm and the pains of anal fissure is altogether apt.

LeRoy Long.

Identical Cancers in Identical Twins. By R. B. Phillips, Fellow in Surgery, Mayo Foundation. Proceedings of the Staff Meetings of the Mayo Clinic, April 6, 1938.

There is a reference to a paper by McFarland and Meade on "The Genetic Origin of Tumors, supported by their simultaneous and symmetrical occurrence in homologous twins," published in 1932. "Their studies seemed to indicate that if a tumor develops in an identical twin in a given organ at a given time, then the same kind of tumor will develop in the other twin in the corresponding organ at the same time or within a reasonable time thereafter."

In the contribution by Phillips there is a sharp distinction between "true identical twins" and twins that are not identical. It is estimated that about 25 per cent of all twins are identical.

It is the conclusion that homologous (identical) twins are the product of one ovum and one spermatozoon which splits in early embryonic life, giving to each half "an amount of chromosome and gene structure approaching as nearly as possible to half of the original whole."

There is a report of the case of one identical twin who developed a carcinoma in the right breast for which operation was done. Ten years later she developed ovarian papillary adenocarcinoma, bilateral, the treatment being hysterectomy and roentgen therapy.

Three years after the development of the carcinoma of the right breast in the first twin the second twin developed a carcinoma of the right breast. It was treated by surgical operation and roentgen therapy.

There is a reference to an editorial in a recent issue of Surgery, Gynecology and Obstetrics by Holman where "he cited six so-called cancer families and suggested that it would be well worth while to have a central library where cases of cancer with definite genetic aspects could be collected for further study."

In discussing the contribution by Phillips, A. C. Broders, Division of Surgical Pathology, Mayo Clinic, referred in a very direct way to the "famous studies on the relationship of heredity to spontaneous cancer" by Maud Slye who in her work has performed necropsy on 140,000 mice, observing more than 100,000 cancers. "She contends that malignancy is transmitted as a localized recessive character and that each type of malignancy is a unit character capable of suppression by a dominant." "According to Maud Slye's investigation, susceptibility and non-susceptibility to spontaneous neoplasms in mice depend absolutely upon genetic factors."

In his discussion Broders refers to "cancer families." In that connection attention is directed to a remarkable cancer family about which Warthin made a report in 1913 and another report in 1925. In 1936 Hauser and Weller made a still later report about this particular family. The paternal founder of the family died about 1856 at the age of 60 with what was thought to be cancer of the stomach or intestine. After that through several generations of his descendants there is a startling repetition of the development of cancer. For example, a son had 11 children, five of them developing cancer.

In closing the discussion Broders said, "The most outstanding evidence in support of the contention that the susceptibility and site of neoplasia in man are controlled by genetic factors is the occurrence either synchronously or asynchronously of cancer and other neoplasms in corresponding organs of identical or homologous twins, as exemplified in this interesting report by Dr. Phillips."

LeRoy Long.

The Bacterial Flora of Clean Surgical Wounds; Ives and Hirshfeld; Annals of Surgery, April, 1938; page 607.

Infection is known to occur in five per cent of all clean surgical wounds even though they are made with due regard to all the principles of aseptic surgical technic.

The paucity of information in the literature upon the bacteriology of surgical wounds and its importance in relation to the problem of wound infection made the authors feel that it would be of importance to carefully culture a series of wounds during the actual operation. They decided to:

1. Take cultures of the skin after it had been prepared for operation.

2. Expose blood agar plates to the air of the operating room during the course of the operation.

3. Take cultures of a series of clean wounds during the actual operative procedure.

4. Follow the healing of the wounds that had been cultured.

5. Review the infections that had occurred in clean wounds on the Surgical Service of the New Haven Hospital during the last three years to determine the incidence of the various types of organisms and their relation to those found in the air, on the skin, and in the wounds at operation.

A study of their figures and of those they were able to collect from the literature justified the conclusion that well over 50 per cent of post-operative wound infections are caused either by Staphylococcus aureus or Staphylococcus albus. It has been shown that these organisms are present in the air of the operating room and on the skin of the patient. They unquestionably contaminate wounds during the operations, and they may be recovered from the wounds by suitable culture methods. If contamination of wounds by these bacteria from the air and skin could be eliminated, the incidence of infected wounds would be much lower.

W. F. Wells and his collaborators in 1933 and 1934, working at the Harvard School of Public Health demonstrated that many of the common pathogenic bacteria are capable of surviving in the air for considerable length of time. Staphylococcus aureus, a common invader of clean wounds, if sprayed into the air according to the technic of Wells, may be recovered after as long as three days. Not only are many bacteria able to live for several days in the air, but when they are sprayed into the air from an atomizer or from the throat by coughing, sneezing or talking, the majority do not settle out quickly but remain suspended almost indefinitely. The air currents waft them about and disseminate them widely.

Wells (Journal A. M. A., November 21, 1936) has discussed the effect of ultraviolet radiation upon bacteria suspended in the air and has stated that it may be possible to sterilize the air of public buildings with radiant energy in conjunction with other methods such as filtration.

D. Hart (Professor of Surgery at Duke University) has attempted to sterilize the air in his operating room with ultraviolet light. He tried this because of the high percentage of staphylococcal infections that were occurring in his thoracoplasty wounds. No source other than the operating room air could be found for these bacteria and after an ultraviolet lamp capable of sterilizing the air about the operating table was installed, a prompt decrease was noted in the incidence of infections.

Gudin (Presse Medicale, March 4, 1936) has emphasized the importance of contamination by bacteria from the air as a cause of wound infection. He was so disturbed by the number of infections occurring in his clean cases that he carefully reviewed all phases of his technic. Despite the strictest attention to the usual details of aseptic technic he was unable to reduce the incidence of wound infection. The air of the operating room seemed to be the only possible source of the bacteria. In order to eliminate this avenue of contamination, he devised an air-tight operating room ventilated only by air which had been chemically sterilized. The members of the operating team were required to change into sterile gowns in an adjoining room so they would not contaminate the sterile air with bacteria from their skin and clothing. Although Gudin presents no statistics, he states that infection practically disappeared and the wounds healed with surprisingly little reaction after adoption of the sterilized air technic.

Unfortunately, today, the methods which have been used to sterilize air in the operating room are clumsy and difficult to employ.

The authors summarize their findings as follows:

1. A review of the literature reveals that about five per cent of clean surgical wounds become infected.

2. Cultures of a series of wounds taken during the actual operations showed all of them to be extensively contaminated with bacteria, among which Staphylococci predominated.

3. Most of the bacteria which were recovered from the wounds at operation come from the skin of the patient or the air of the operating room.

4. The majority of postoperative wound infections are caused by bacteria similar to those which were isolated from the wounds at operation.

5. Any improvement in surgical technic which will decrease the contamination of operative wounds by bacteria from the air of the operating room or the skin of the patient should result in a decrease in the postoperative wound infection.

LeRoy Downing Long.

The Value of Hormonal Findings in Hydatidiform Mole and Chorionepithelioma; S. A. Cosgrove; American Journal of Obstetrics and Gynecology; April, 1938; Page 581.

This author quotes the conclusions drawn by Fels and Rossler in 1929 which have received practically universal acceptance. They follow.

1. That in hydatid mole and chorionepithelioma there is much more prolan secreted than in normal pregnancy.

2. The quantitative estimation of this hormone is an actual guide to diagnosis in that

3. Presence of increased hormone for more than **two weeks** after normal pregnancy, or more than **eight weeks** after the extrusion of hydatid, is **proof** of chorionepithelioma.

4. Persistence of positive test for this hormone **after** operation and removal of chorionepithelioma is **proof** of metastasis.

The author then reviewed 15 cases of hydatid mole which occurred in the Margaret Hague Maternity Hospital prior to March, 1936. During the same space of time 20,450 living babies were delivered in this hospital.

Twelve of the cases of hydatid mole were treated conservatively, mostly by dilatation and curettage. In all instances where the Friedman test was employed, a negative test was received within seven weeks after the extrusion of the mole, except in the three cases of chorionepithelioma which he reports in detail.

Three of the cases with hydatid mole, which were followed carefully by Friedman tests, had persistent positive Friedman tests and were subjected to complete hysterectomy in the 68th, 49th, and 55th days after the extrusion of the mole respectively. Following complete hysterectomy, all patients maintained a negative Friedman test, have remained well, and have shown no evidences of recurrence or metastases.

The author points out that in one patient in

particular exploratory curettage would probably not have identified the chorionepithelioma and that it was only by the positive hormonal test, that effective treatment was instituted early enough to effect a cure.

The author also adds a word of warning in the following quotation: "As indicated above, laboratory findings must not be regarded as wholly determinative in these cases. If they are positive they confirm the significance of the clinical behavior. Negative findings, however, cannot be implicitly relied upon as in all departments of medicine but, the principal basis of diagnosis and treatment must continue to depend upon history, course, clinical findings, and the common sense and surgical training of the attendant."

Comment: As stated by this author, hydatid mole is an uncommon disease and chorionepithelioma a rare one. On the other hand, chorionepithelioma is a very malignant neoplasm, metastasizing early and extensively. It is therefore evident that, in order to obtain cures from chorionepithelioma, the earliest possible positive diagnosis is essential. The continued use of the Friedman test following the extrusion or removal of a hydatid mole is not only an extremely valuable adjunct to clinical course and finding, but in many instances it is the only means of instituting the proper radical treatment early enough to be effective in producing a cure. It, therefore, seems quite evident that all instances of hydatid mole should be followed meticulously and routinely with Friedman tests, preferably in variable dilutions.

Wendell Long.

How Long Does It Take For a Large Carcinoma of the Stomach to Develop? Report of Two Instructive Cases; Staff Meetings of the Mayo Clinic, March 9, 1938; M. W. Comfort and W. L. Butsch.

Every physician sooner or later has the experience of examining a patient carefully and finding nothing in the stomach to account for vague gastro-intestinal symptoms, only to have the patient return in a few months with a large gastric carcinoma. In such situations a physician must say to himself, "Did I miss the growth at the time of the first examination or has the growth developed in this short time?" To those who have had such an experience it will be comforting and reassuring to read the reports of two cases given in this article. These reports show that sometimes large carcinomas can develop within a few months.

Three years ago Alvarez, Judd, Wilbur, and Baker were interested in this question as to how long it takes for a large carcinoma of the stomach to grow. They presented at that time a case, showing that a lesion of a low grade of malignancy can grow for at least three years without becoming inoperable, that symptoms can disappear for months at a time and that the blood may be unaffected by the disease so long as there is little oozing from the growth.

The two cases reported by the authors in this article give another answer to the same question. In the first case, at the first admission, although thickening was present it did not appear to be malignant on gross examination or on microscopic examination of a specimen taken for biopsy; within 15 months extensive, multiple, polypoid carcinomas had developed, the largest measuring 4 cm. in diameter. In the second case, at the time of the first operation at Mayo Clinic, the only demonstrable lesion was a slight amount of thickening of the gastric wall, near the posterior suture line of the previous gastro-enterostomy. The stomach was opened but no evidence of disease could be found in the mucosa. Symptoms of obstruction developed within four months and when exploration was carried out eight months after the first exploration, a carcinoma measuring 12 by 15 cm., with extensive involvement of lymph nodes, was removed.

It is evident that a carcinoma of the stomach can reach a large size within a few months.

A negative roentgenologic examination of the stomach may not mean that a cancer has been missed in those cases in which cancer of the stomach is found after the passage of a few months. A growth may be in its precancerous stage or a carcinoma may be too small for demonstration by roentgenologic means. A roentgenologic examination that does not disclose cancer of the stomach should not be allowed to lead to a sense of false security, especially if the patient is in the cancer age, if the symptoms are of recent development, and if the concentration of gastric acids is low. The patient should remain under observation and further roentgenologic examinations of the stomach should be carried out. It is possible that examination with the gastroscope may become most important in the early diagnosis of carcinoma of the stomach. (There is an enlightening report from the London Hospital contained in the 1937 Year Book of Surgery giving results of examinations with the gastroscope).

Konjetzny expressed the belief that hyperplastic gastritis about a gastro-enteric stoma may be the precursor of carcinoma in cases where symptoms persist following gastro-enterostomy. There is a growing mass of evidence pointing to chronic gastritis (accumulation of lymphocytes with faulty regeneration of the mucous cells) as a precursor of carcinoma of the stomach just as is ulcer. Konjetzny stated that carcinoma arises, in the majority of cases, on this basis. The conception that chronic gastritis is the soil in which cancer develops in a large percentage of cases, if finally accepted, will influence greatly the methods used in the prophylaxis and early diagnosis of cancer.

LeRoy D. Long.

EYE, EAR, NOSE AND THROAT

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Vitamins in Treatment and Prevention of Ocular Disease. Arthur M. Yudkin, M.D., New Haven, Conn. Archives of Ophthalmology, March, 1938.

Osborne and Mendel and McCollum and Davis, 1913, showed by animal experimentation, that an absence of Vitamin A from the diet resulted in ocular inflammations. Investigators concluded that xerophthalmia and keratomalacia and many similar diseases were caused by an improper diet—namely lack of some one particular vitamin as for instance vitamin A.

The work of Fraudsen on hemeralopia is reviewed. Similar observations have been made on persons presenting a clinical picture of neurasthenia and hysteria. The retinal disturbance may be the same in these conditions. Many of these persons have blond fundi and are very sensitive to light.

A corneal lesion occurring in adults is described. Ordinary routine methods of treating the breaking down of the cornea are usually ineffective. The lesion is often designated as a catarrhal ulcer. There is little if any accompanying inflammation. It appears as if the cornea had been injured but the history for such is negative. Floaters are present in the aqueous humor and Decemets membrane may have many deposits present. Some of these patients showed improvement when cod liver oil was added to their diet. As the response was not universal it was evident that there were some other factors involved. The intestinal tract was suspected as being at fault. The cod liver oil was continued but in addition Vitamin B complex was given before each meal. Most of the ocular and general symptoms improved or disappeared entirely.

The author suggests an early regime of a diet high in vitamin content to retard retinitis pigmentosa. Chorioretinal disorders are also influenced favorably by a diet including vitamin A and brewer's yeast powder. The University Clinic (Yale) policy is to treat the general condition occurring at the same time with the eye condition. Focal infections are not removed until the general health of the patient is improved.

Vitamin B is recommended in anorexia of dietary origin, in securing optimal growth of infants and children, in beriberi, vomiting of pregnancy, several forms of neuritis and in toxic amblyopia due to excessive alcohol and tobacco.

If there is a focus of infection suspected of being the cause of ocular inflammation, then a both A and B vitamin complex is recommended.

Cataract is not associated with scurvy in humans so the relation of vitamin C to cataract formation is enigmatic. Intravenous vitamin C decreases the coagulation of the blood. The author prefers the use of lemon juice to Vitamin C in retinal and vitreous hemorrhages. To an adult showing early lenticular changes the author gives the following advice: an adequate intake of calories, the juice of one lemon before breakfast and dinner, vitamin B complex (or teaspoonful potent brewers' yeast) twice daily before meals; be sure there is no uncompensated cardiovascular condition.

Treatment of Simple Chronic Laryngitis. Louis H. Clerf, M.D., Philadelphia. Archives of Otolaryngology, March, 1938.

Kyle's dictum: laryngeal changes often are a "local manifestation of a systemic condition."

The change of tissue depends on character of the lesion and the intensity and duration of the inflammatory reaction and the individual. Some individuals tend toward excessive proliferation of fibrous tissue; follows hyperemia, cellular infiltration, inflammatory exudate and increase in connective tissue elements. The entire larynx may be involved. Where there is the most activity, there is usually the most involvement, namely — vocal cords — ventricular bands — interarytenoid space. Treatment has two phases: relieve tissue change which interferes with laryngeal function and eliminate the causative factor.

Etiologically there are infections, irritative conditions and systemic disorders. Infections include diseases of the upper air and food passages and of the tracheobronchial tree. Irritative conditions are smoke, dust and gases, excessive use or abuse of the larynx. Systemic conditions are effects of alcohol, defective elimination, gout, hepatic or cardiorenal disease and hypertension. Syphilis, tuberculosis and carcinoma give a chronic laryngitis.

Immediate alleviation of symptoms is the important factor to the patient. This must be taken into consideration by the laryngologist while he is attempting to detect and remove the predisposing cause. All conditions that might erroneously be called chronic laryngitis must be excluded.

Treatment should decrease the chronic congestion present in the larynx. "Don't talk; don't smoke; don't use alcohol." This many times will be sufficient. Additional measures include medication by inhalation, application or instillation. Inhalation of compound tincture of benzoin with probably a little menthol from a vaporizer is advocated. Instillation of an oily solution is an aid. Direct application to the vocal cords traumatizes the mucosa. The author does not use silver nitrate, zinc chloride or ferric chloride solutions. This procedure will usually give symptomatic relief.

Health, habits, occupation and environment of the patient should be investigated. Voice abuse is the most common cause of chronic laryngitis—shouting—cheering—speaking—singing—and incorrect training for singing. These produce an acute laryngitis which is not given ample time to subside before another acute attack is precipitated and so gradually the condition becomes chronic.

Any obstruction of the nose and pharynx should be removed. Any focus of infection of the upper air passages, the ears, the mouth, the teeth and the gums should be located and removed. Faucial and lingual tonsils should not be overlooked. Direct extension of an infection from the nasopharynx or oropharynx to the larynx may occur. Overflow of secretions and food during sleep from an organic stenosis of the oesophagus, cordiospasm or a pharyngeal diverticulum, may produce a chronic laryngitis or tracheitis. Many other probable causes are mentioned. Not always does removing the exciting factor produce a noticeable improvement immediately. As a whole, however, recovery depends on finding the cause and effecting its removal or correction.

Deafness From Drugs and Chemical Poisons. Dr. H. Marshall Taylor, Jacksonville, Fla. The Laryngoscope, September, 1937.

Some drugs and chemicals have a selective action for the VIIIth nerve and the auditory apparatus. Some of the ways that such may affect the auditory apparatus are: "A toxic action on the ganglion cells of the cochlea and associated nerve fibres; cause a change in the endothelium of the smallest capillaries or a contraction of the blood vessels of the internal ear, ischemia, loss of nutrition and anoxemia, degeneration atrophy of the ganglion cells and nerve fibres in the basal coil of the cochlea; a diminution in the endolymphatic pressure, with a resulting collapse of the membrana corti."

An unsuspected susceptibility to some drug possibly might be an etiological factor in nerve deafness. The placenta acts as a dialyzer for certain drugs. Certain drugs may be found in the foetal circulation as well as the maternal circulation, in approximately the same strength. A child is probably 2½ to three years old before a diagnosis of nerve deafness is made. Prenatal history is usually forgotten by this time. Instead of a hereditary deafness it may be the result of an injury to the organ of hearing inutero from administering some particular drug to the mother. This calls for closer cooperation between the otologist and the obstetrician.

Of these drugs quinine is the chief offender being used therapeutically as an abortifacient, in the induction of labor and many other diseases that occur concurrently with pregnancy. Other drugs mentioned are: tobacco, arsenic, salicylates, alcohol, lead, phosphorus, carbon monoxide, carbon disulphide, oil of chenopodium, mercury, morphine and anilin dyes.

Interesting Cases of Lateral Sinus Thrombosis. Henry M. Scheer, F.A.C.S., F.I.C.S. The Eye, Ear, Nose and Throat Monthly, March, 1938.

This article is an interesting discussion of the question in addition to case reports. The author's own conclusion is as follows:

A great amount of data can be assembled from the study of this series of interesting cases, each of which revealed some details not referred to in the typical textbook presentation of this serious intracranial complication.

1. We find it is not essential to have had exposed lateral sinus, either pathological or accidental, to have lateral sinus thrombosis present.

2. Typical "sawtoothed" septic temperatures may or may not be present, preceded or not by chills.

3. The complication may arise early in the course of an acute middle ear infection, though it occurs most frequently during the course of an O.M.P.C.

4. Lateral sinus thrombosis may occur at any age from childhood to old age.

5. In certain cases, no evidence of chronic mastoid disease may be elicted subjectively until the acute clinical picture appears, indicating the presence of acute lateral sinus thrombosis. This most frequently occurs during the course of an O.M.P.C.

6. In certain cases no evidence of the complication may be present subjectively or objectively, until perforation of the lateral sinus occurs during the lateral sinus thrombosis.

7. Eye fundus changes may or may not be present.

8. Metastatic foci may occur early or late in the course of the complication, or not at all.

9. Operations may be done under local anesthesia.

10. Occlusion of the lateral sinus without ligation of the internal jugular vein will give successful results, when the pathology in the lateral sinus is high, and blocking can be performed in the normal region of the lateral sinus, below the site of pathology.

11. To depend upon positive laboratory findings before proceeding surgically in many cases will delay the proper treatment unduly.

12. Laboratory results at times may even mislead and delay.

13. Toby-Ayres cerebrospinal fluid pressure test is not fool-proof.

14. When indicated, investigation of both lateral sinuses may be done with safety to determine which is thrombosed.

15. The wounds after blocking of the sinus should not be sutured, but allowed to granulate in.

16. In an effort to prevent further inward involvement into the lateral sinus where perisinus abscess is present at the time of the mastoidectomy, the normal sinus should be exposed surrounding the pathological area involving the lateral sinus.

17. The patient should be left in the care of a thoroughly trained assistant or nurse, who should be able to recognize and report or even treat untoward symptoms.

18. Application of keen diagnostic acumen and judicious surgical judgment, with early operation for sinus thrombosis, will unquestionably give the patient a better opportunity for complete and uneventful recovery.

19. To prevent intracranial complications, lateral sinus thrombosis or others, O.M.P.C. should be avoided by properly treating O.M.P.A. Every O.M.-P.A. should be followed until a dry middle ear exists, whether treatment be conservative or surgical.

ORTHOPAEDIC SURGERY

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Spurs of the Os Calcis. Arthur Steindler and Albert R. Smith.. Surg. Gyn. & Obst., March, 1938, Vol. 66, No. 3.

After discussing briefly the fact that the association of painful heels with calcaneal spurs is comparatively recent, the authors describe both the conservative and the radical treatment and give results following treatment. Only cases in which the calcaneal spur could be seen by X-ray were used. A total of 71 painful heels was treated. The age varied from 18 to 75 years. Trauma other than walking was of etiological significance in only nine heels, and gonorrheal urethritis was positively associated in only two instances.

Conservative treatment consisted of an insole, either felt or solid leather, with a hole cut out over the point of the spur. Soft rubber sponge was sometimes inserted over the spur. In addition to these measures, some of the feet were treated by posterior wedge in the heel of the shoe, to relieve further the stress on the tuber of the os calcis.

With conservative treatment in 71 cases, or 71 heels, 46 per cent received complete and permanent relief, and 54 per cent received slight or no relief. Sixteen of these feet that received no relief were operated by simple excision of the spur. Of this group 44 per cent received complete and permanent relief and 56 per cent slight or no relief.

A rotation osteotomy of the os calcis is described, which consists primarily of a lateral incision, a transverse division of the os calcis; the incision extending across the bone with the osteotomy anterior to the heel cord and also anterior to the insertion of the plantar muscles. A wedge of bone is removed and after lengthening the heel cord, the os calcis is rotated so that the spur points superiorly rather than in a position for allowing pressure on this spur. This is held in place by an ivory peg or metal wire. Eight of these cases were operated with a total of 75 per cent complete and permanent relief, and 25 per cent with slight or no relief. This last operation is rather formidable and should be undertaken only in those cases where conservative therapy has failed, or where the spur has recurred.

Newer Concepts in the Treatment of Injuries to the Ligaments of the Knee Joint: an Evaluation of the Mauck Operation. M. Thomas Horwitz, and Authur J. Davidson. Surgery, March, 1938. Vol. 3, No. 3.

The authors point out first that it has been proved definitely that stable knees may follow severe dislocations of the knee joint treated conservatively; also many surgeons disregard or excise torn crucial ligaments with good results and several observers have shown that repair of the collateral ligament, without repair of the crucial, may result in good stable knees.

The authors wish to show (1) that the clinical and experimental results they have obtained confirm the above contingence and (2) to emphasize that the Mauck operation is of definite value in injury to the knee joint with associated injuries to the crucial and collateral ligaments. They point out anatomically the attachment of the anterior crucial and the posterior crucial ligaments and state that the integrity of the knee joint depends not only on these ligamentous structures but upon the posterior oblique ligament, the muscular aponeuroses and tendons about the joint, and to a less extent the capsule and menisci.

The lateral ligaments become taut in full extension, thus checking hyperextension, lateral motion, and rotation. In flexion they become relaxed and the knee joint is loose, permitting slight lateral and rotatory motion.

Experimentally the authors noted in observations on cadavers and on large dogs, (1) that with the knee fully extended, section of the anterior crucial ligament, posterior crucial ligament, or both, did not disturb the stability of the knee. There was no undue lateral or rotatory motion and only very slight anteroposterior motion present. (2) With the knee in full extension, the collateral ligaments severed, and the crucial ligaments intact, definite anteroposterior, lateral, and rotatory motion existed, which became greatly exaggerated with severance of the crucial ligaments. (3) With the knee flexed, if the anterior crucial ligament was severed, anteroposterior motion became evident; but this was greatly increased, as was also the range of abduction and rotation of the tibia on the femur with the knee flexed, when the internal collateral ligament was severed. (4) With the knee flexed,

with the anterior crucial ligament intact, severance of the internal ligament resulted in definite "rocker" motion, or anteroposterior motion, with increase in abduction and rotation of the tibia on the femur. (5) In two cadavers, with the pelvis fixed and the knee flexed, the leg was forcefully abducted on the femur. The internal lateral ligament was torn from its tibial attachment in each case, and with the abducting force continued, marked stress was placed upon both crucial ligaments, the greatest strain being exerted on the anterior when the leg was internally rotated and on the posterior when the leg was externally rotated. In this position the internal meniscus, its anterior and posterior attachments intact, became displaced into the knee joint, but no actual tear was seen to occur, possibly due to the absence of superincumbent weight.

The authors then left a number of clinical studies which confirm the anatomical studies. These were made by a number of different observations.

Treatment of this type of injury, either as actual tears or stretching of the internal collateral ligament is next described. Methods advocated by different surgeons are described, and finally the authors describe Mauck's operation for relaxation of the internal collateral ligament.

This operation is indicated after conservative regime has been carried out. The operation is performed by an exposure of the inner aspect of the knee joint with a slightly anterior curved incision, extending from the adductor tubercle of the femur to four inches below the joint line. Using a broad chisel the inner side of the tibial head with the internal lateral ligament, is removed and reflected upward. The capsule is incised and the internal meniscus is removed. At this time the knee joint may be thoroughly inspected. The medial lateral ligament is shortened by mortising the piece of bone previously chiseled off with its attached ligament, into the tibia at a lower level. The leg is fully extended and strongly adducted at this time, so that all the correction possible is obtained. The capsule is plicated if necessary and the subcutaneous tissue and skin closed. The knee is immobilized in plaster in full extension for six weeks. However, it is hinged at the knee at the end of two weeks to allow early flexion and extension, preventing any adduction or abduction.

This technique has been employed by the authors, and in one detail differs in that the bone flap was implanted somewhat forward as well as downward to increase the obliquity of the anterior fibers, to act as an additional check against forward movement of the tibial head of the femur. This, of course, was in cases of anterior crucial ligament tear.

In conclusion, the authors feel that the less extensive operative procedure, as outlined by Mauch, is suitable for treating extensive tears of the medial collateral ligament with associated crucial ligament rupture.

PLASTIC SURGERY

Edited by
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Aseptic Uretero-Intestinal Anastomosis. James I. Farrell, M.D., F.A.C.S., and Yale Lyman, B.S., Evanston, Ill. S. G. & O., March, 1938, Vol. 66, Number 3.

The authors have prepared a very clear cut article on the subject, "Aseptic Uretero-Intestinal Anastomosis." The principal interest in this article is the technique employed.

Procedure: A portion of the sigmoid is grasped between two Allis clamps and an incision is made longitudinally in the serosa. The longitudinal muscle of the bowel is separated until the circular muscle is exposed. The circular muscle is not cut, but is separated from the submucosa at the lowermost portion of the incision. The submucosa is then grasped with a small mosquito forceps and brought out through the opening made in the circular muscle. The ureter is approximated to the submucosa by a continuous suture of No. 00 chromic catgut. A small vein clamp is placed on the ureter above the site of anastomosis. A curved needle enters the lumen of the bowel opposite its insertion into the ureter. A second suture of catgut is used to approximate the ureter to the bowel. The silk thread is now used to make the opening between the ureter and bowel. This is done by a sawing motion with the thread. When the thread is removed, a second suture line is placed along the point of the ureterosigmoidal junction.

A clamp is now placed on the ureter between the site of anastomosis and the bladder; if any point of leakage occurs it can be seen and closed. The ureter is ligated and cut. The cut end of the ureter is then buried in the bowel wall between the submucosa and the circular muscle. No attempt is made to close the circular muscle since it forms a sphincter at entrance of ureter into the bowel. The longitudinal muscle is approximated with sutures over the ureter.

The resulting anastomosis is completed in one operation. Urine appears in the bowel almost immediately. The ureter is securely anchored to the submucosa thereby preventing it from becoming detached. Side-to-side anastomosis allows for a large longitudinal opening in the ureter, which prevents a contraction of its orifice. The circular muscle of the bowel surrounds the intramural portion of the ureter there by forming a closure mechanism which prevents regurgitation of intestinal contents in the ureter. Because of the ease of doing a side-to-side anastomosis, a water tight anastomosis is made. This is most important because a leak from the bowel usually causes a fatal peritonitis. It is much safer to do this type of anastomosis than to insert the end of the ureter through an opening in the bowel. Leakage is more likely to occur when the ureter is inserted into the bowel.

Experimental Data: Seven dogs had an anastomisis of both ureters and the sigmoid. These dogs were allowed to survive for six months, then four of the animals were sacrificed to study the end-results. One dog died at the end of four months, and autopsy was performed. Two dogs are alive and well after an eight-month period.

(There are numerous photographs and drawings which show technique of procedure and autopsy specimens of kidneys and bowel of dogs.)

Advantages of Technique: The transplantation of the ureters into the bowel is a physiological problem, in which one must adhere to fundamental principles. First, if an anastomosis is to be done between the ureter and sigmoid, it must be an air-tight and water tight anastomosis. The escape of urine, fecal material, or gas into the peritoneum, after the completion of the operation, is certain to cause peritonitis. The method of transplantation, described as the side-to-side type, makes it possible to test the anastomosis after its completion.

Second, the maintenance of the original size of the ureteral opening into the bowel is important. Stricture of the ureter following transplantation is often due to the large number of sutures taken in the circumference of the ureter. This is obviated in our operation by the suture of the side of the ureter to the side of the bowel, instead of implanting the cut end of the ureter. In the Higgins technique the uretero-sigmoidal opening closes spontaneously, if the ureter remains connected with the bladder over a period of six to eight weeks.

In attempting to construct a valve-like action at the site of anastomosis, we have cut no muscle in the bowel wall. The ureter is transplanted so that it traverses the longitudinal and circular muscle layers in the bowel and ends just beneath the mucosa of the bowel lumen. The ureter does not project into the lumen of the bowel. We feel that this is a factor in preventing postoperative blocking of the ureter during the healing process.

Anastomosis of the ureter and sigmoid, without opening either structure in the peritoneal cavity, certainly tends to prevent peritonitis, which is a danger in other procedures. The use of the sawing ligature in blood vessel surgery has long been known. We feel that its use in uterosigmoidal anastomosis is worth while.

Conclusions: The authors apparently have made some improvement in technique in uretero-intestinal anastomosis. The principle of the cutting silk ligature is ingenuous. The principles employed have been previously employed in blood vessel surgery. Anyone attempting this operation should be familiar with the old as well as the new technique. This is one branch of work that has not kept pace with other surgery in this section of the country.

INTERNAL MEDICINE

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The following editorial from the American Journal of Clinical Pathology, March, 1938, seems worthy of serious consideration on the part of Clinicians because they are not and cannot be expected to be familiar with the problems of the laboratory in their routine daily work. Where practical work leaves off and research work begins is something the director of every laboratory must determine and regrettably so in many instances because we have had the experience of having to reject work, new tests or procedures, regrettably for two reasons: First, that the clinician had presented an interesting test and secondly, that we too are eager to invade realms of unknown fields and establish new tests.

The following editorial is quoted in part because an abstract would hardly represent the thought of the editor satisfactorily.

"Clinical Pathologist or Magician?"

"There was a time when the 'laboratory' and its 'staff,' if not entirely overlooked, were regarded with amusement; now they enjoy the mixed blessings of such diverse emotions as contempt, respect, mistrust, confidence, depreciation, and even awe. Of course, opinion is divided, but often even the same individual shuttles back and forth from one attitude to its opposite.

"All in all, however, there is a sufficient number who feel that the laboratory is perhaps of some little use after all, a place in fact where magic of a sort is performed. Some may even look upon the clinical pathologist as something of a magician, though obviously not quite on the same high plane as the allergist or endocrinologist.

"If we consider the fact that a few drops of blood may be made to disclose the condition of a patient's carbohydrate metabolism, a few more reveal the function of his kidneys, and that 5 cc. of urine injected into the ear vein of a rabbit may decide whether she 'is' or she 'isn't,' and contemplate further the number and variety of problems (anatomical, hematological, serological, bacteriological and chemical) left at the door of the laboratory for solutions, it may lead to the conclusion that perhaps this much-berated institution has some little reason for existence. Such a concession often carries the proviso that the laboratory must never err and that it must be capable of performing pretty nearly everything on a moment's notice.

"Clinical pathologists, and very good ones, have confided that one of their major difficulties is the determination of lead in excreta. Somehow at the end of their efforts they are left cold, uncertain as to whether the analysis was really accurate. After several attempts they are often forced to the point of admitting their inability to undertake the procedure. Offhand it may seem that the determination should be easy, but on closer inspection the difficulties become obvious. Usually the necessary equipment is not available even in fairly good laboratories. Besides, the laboratory may be in such close proximity to offices, wards, private rooms and clinics that the fumes and stenches incurred in such an analysis would immediately bring down upon the laboratory the wrath of all, particularly the one who requested it. In a laboratory organized and equipped to do many such analyses, the procedure soon becomes a matter of routine and presents no problem, but the condition is altogether different if a request for a lead degermination comes but once in a long while. It means that someone, usually the director, must drop everything else in order to prepare or restandardize the reagents and conduct the analysis, which may consume several days. I recently inquired from the head of the chemical laboratory in a large eastern teaching hospital whether he encountered any difficulty with the determination of lead. His reply was that the analysis was more trouble than it was worth. After a little discussion, we came to the conclusion that it might be more practical and economical if the various hospitals in this large city cooperated in maintaining a laboratory in one of the institutions where this analysis, and such others as the determination of bismuth, arsenic and mercury, might be more satisfactorily conducted.

"There are many similar examples and also others of a somewhat different type. As a second illustration reference may be made to the work of several groups of investigators on the changes in blood iodine in thyroid disease. Comparison of the values obtained before and after thyroidectomy may be illuminating. It may be very interesting that in a case of hyperthyroidism the blood iodine may rise, let us say from 5r per cent before the operation to over 100r per cent after the operation. It must be conceded that in presenting such a case before a group of students or fellow-clinicians, data of this sort may be legitimately used in illustrating certain aspects of the pathological physiology of the gland. But is this a diagnostic procedure that can be undertaken under ordinary circumstances by the private, or even the hospital laboratory? It is not. Irrespective of how well trained a man may be as a chemist, he must devote many days to the preparation of the necessary reagents, and many more days to acquiring the requisite technical precision. Moreover, the reagents once prepared must be scrupulously watched, protected from the slightest contamination and frequently restandardized, or renewed. It is one thing for a group of three or four investigators restricting themselves to the problem of blood iodine, equipping a laboratory specifically for this purpose, removing it sufficiently from wards and dispensaries where there is always iodine in the air, and performing their work day after day until it becomes a routine. It is a totally different thing to find, some fine morning, a 5 cc. specimen of blood with the request 'Please determine the iodine content.'

"Some time ago a friend of mine came with the proposal that in a certain proportion of his patients it would be very desirable to analyze the urine, and perhaps even the blood, for estrogenic and gonadotropic hormones. A good idea and perhaps even clinically relevant, but imagine setting up a dozen benzene extractors daily, separating the hormones from everything else, injecting the products into

series of mice and rats, taking time out for vaginal examination at 96, 104 and 128 hours, and later autopsying and exploring these animals. And where are these mice and rats to come from, who will feed them, and where and how will they be kept? That such studies, conducted under proper auspices, may be of the utmost value cannot be disputed, and it may even be granted that the technic now available may be applied in special instances to clinical diagnosis, but is it a procedure for the general laboratory of a hospital?

"From the foregoing it is not to be concluded that I advocate the avoidance of newly acquired technical procedures. On the contrary progress must continue and it is often for the laboratory to set the pace. But it must be stressed that if there is to be expansion, it must be along sound and practical lines. A laboratory doing 5,000 examinations a month can usually take on an additional 200 without much inconvenience. However, if the 200 additional requests for laboratory work involve unusual and difficult manipulations, the situation becomes different. It may represent an additional load, not of 4 per cent, but of 100 per cent, or even more, and call for unavailable reagents, equipment, room and especially skilled workers.

"If a member of a hospital staff, or a clinician in private practice, wishes to test new laboratory methods, or to follow a legitimate problem, there should be some provision for such pursuits, however fantastic they may seem. But this should not be at the expense of the general laboratory, or of its routine work. Special projects need to be turned over to competent assistants. Many laboratory directors would be willing to act in an advisory capacity without arrogating themselves any part of the credit that might accrue from such work."

UROLOGY

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Sulfanilamide Therapy in Gonorrhea and Its Complications—Edwin P. Alyea, Walter E. Daniel, and Jerome S. Harris, Durham, North Carolina. Southern Medical Journal, April, 1938.

The authors discuss their experiences with sulfanilamide therapy in the treatment of gonococcal urethritis. They report that 86 per cent of their cases were cured when they were treated with the drug. Of particular interest to them, so far as its relation to the success and failure in treatment was the blood concentration of sulfanilamide. Through blood determinations they found no significant relation between the amount of the drug concentrated and whether a good or bad result was obtained.

The average cured case showed 6.2 mg. sulfanilamide per 100 c.c. of blood while the average unimproved case presented only slightly less amounts of the drug (4.8 mg. per 100 c.c.). Many of the patients who showed good results had a concentration as low as 2.5 mg. to .3 mg. per cent, however, some patients who did not respond favorable to the lower dose did react to an increased amount which raised their blood concentration level. In spite of this observation some cases showing failure had concentrations as high as 10 mg. to 13 mg. per 100 c.c. In view of these observations they felt that blood concentration is not the important factor that determines whether there will be a success or failure in treatment.

Comment: No drug has received as much publicity the past few months as sulfanilamide in the treatment of gonorrhea. Nobody disputes the fact that it is an extremely potent preparation usefui in the cure of this infection, but the only question to be settled is how efficient it is. The literature is full of papers where 75 to 95 per cent cures are reported. Despite such optimistic reports, it is my belief the average practitioner is not obtaining such good results and certainly I am personally not seeing such success. Even increasing the amount of drug, given to 80 and even 100 grains daily at the beginning of treatment I have not been able to show more than 30 per cent cures in the ambulatory patient who has acute gonorrhea. It must be understood that by cure, I mean absence of discharge, shreds, and pus in the urine, freedom from prostatic infection by examination of the secretion repeatedly and most important of all failure to provocate the infection by appropriate measures. All such criteria of successful cure should be present not later than two to three weeks following the onset of the infection and initiation of treatment.

Because of such a difference in views as regards the efficacy of sulfanilamide, I would welcome correspondence of a statistical nature from individual physicians over the state detailing their experience with this drug as far as it is related to the treatment of gonorrhea. Only by large number of case records obtained from many individual doctors may we clarify in our minds the therapeutic status of the remarkable medicine. Such information will be compiled to be used for future publications in the Journal. In your replies it is only necessary to state the number of cases treated, the percentage of successes or failures, and the number of toxic reactions encountered.

The authors of this article have contributed much to our knowledge of the drug by these observations on blood concentration of sulfanilamide. I believe that we will utilize blood determination more in the future in order to be assured that an adequate concentration of the drug is being obtained during treatment.

Simplified Analgesia In Urology

Joseph E. F. Laibe

(Assoc. Clin. Prof. of Urol., Loyola Univ. School of Med., Chicago.) Ill. Med. Jour., 73:224 (March) 1938.

The analgesic state should be deep enough to allow the surgeon to carry on the operation, but, when practical, less of the anesthetic or analgesic should be used to at least partly eliminate some of the operative risk. A dose of 1/32 to 1/20 grain Dilaudid plus 1/150 to 1/100 grain scopolamine given about one-half an hour before cystoscopy has been found to produce a satisfactory analgesic effect with adequate relief of pain within a shorter time than with morphine. In general, this combination holds these patients so well that other analgesics are not required. Patients weighing 120 pounds or less are given the smaller doses while the larger amounts are reserved for larger patients.

For major surgery, Dilaudid, 1/20 grain, and atropine, 1/150 to 1/100 grain are given about 45 minutes before the operation, which is usually done under ethylene or nitrous oxide. In general, Laibe found Dilaudid a satisfactory opiate for pre or post-operative use, as well as in such conditions as renal colic, bladder spasm, etc. In concluding his report he states:

"1. Adequate analgesia for cystoscopies is often obtained by using morphine, grain 1/6 to 1/4, or Dilaudid, grain 1/32 to 1/20, with scopolamine, grain 1/150 to 1/100, depending on the weight and irritability of the patient. If such a procedure is used the risk of depression is not as great as when inhalation or spinal anesthesia are used.

"2. Dilaudid has proved to be a more satisfactory opiate than morphine for the relief of pain in cystoscopies or other surgical cases, in renal colic, tumors, etc., since there is practically no nausea or other evidence of stimulation accompanying its use, and there is less necessity for post-operative catheterization."